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REVIEW AND EVALUATION OF THE WATER QUALITY PROGRAM IN MONTANA

Federal Water Quality Administration
Kansas City, Missouri

September 1970

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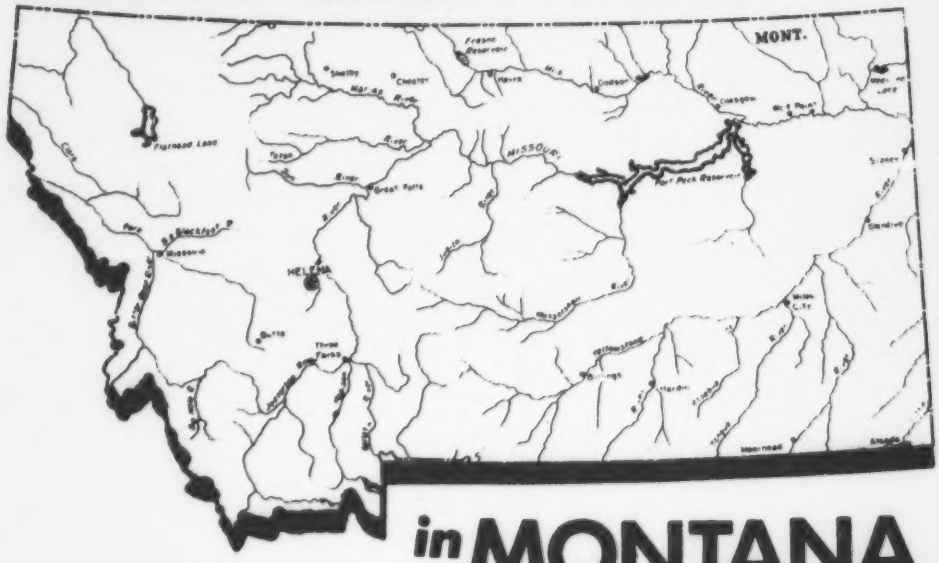
Montana

REVIEW AND EVALUATION
OF THE

WATER QUALITY PROGRAM



in MONTANA

UNITED STATES DEPARTMENT OF THE INTERIOR
FEDERAL WATER QUALITY ADMINISTRATION
MISSOURI BASIN REGION, KANSAS CITY, MO

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A Report on a Review and Evaluation of the Water Quality Programs in the State of Montana

United States Department of the Interior
Federal Water Quality Administration
Missouri Basin Regional Office, Kansas City, Missouri and
Northwest Regional Office, Portland, Oregon
September 1970

I

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INTRODUCTION

This report presents an evaluation of the water quality control programs in the State of Montana and recommendations for improvement. The review and evaluation were conducted jointly by the Northwest and Missouri Basin Regional Offices of the Federal Water Quality Administration as arranged with Forrest H. Anderson, Governor of the State of Montana, on April 9, 1970. The purpose of the study is to evaluate the authorities, organizational components, budget and manpower resources and functional programs devoted to water quality in Montana and to recommend improvements needed to meet the goals of water quality protection and enhancement in the State.

Two fundamental policies of Federal water pollution control law underly the conclusions and recommendations drawn in this report. The first is of longstanding in the history of pollution control laws in the United States; that is, the declared Federal policy ". . . to recognize, preserve, and protect the primary responsibilities and rights of the States in preventing and controlling water pollution . ." The second is of more recent--but no less important--origin, having been most clearly and consistently evidenced in Federal laws and pronouncements since the Water Quality Act of 1965; that is, the value of and need for prevention of pollution and enhancement of water quality, as opposed to solely corrective or clean-up measures.

In the case of Montana, these preventive policies bear significant importance. Montana boasts a great abundance of high quality waters throughout the State and is proud of the quality of its entire environment. However, Montana is literally at a crossroads of determining the quality and utility of that environment. In particular, if the water quality programs in the State remain at their presently low levels, the existing localized pollution most certainly will become more pervasive. As will be seen in later discussions, waste treatment requirements to abate even existing pollution are not being met. Existing laws and State policies do not clearly nor strongly establish an institutional framework for protection of the environment so that industries, cities and other individual pollution sources may understand their responsibilities. And programs in State government charged with water pollution control are not funded or staffed with adequate resources to meet existing needs, much less an effective preventive program.

Aside from the FWQA evaluation, Governor Anderson concurrently appointed a committee of State officials and consultants to review the State's water pollution control laws and to prepare draft legislation correcting any deficiencies for consideration in the 1971 State legislative session. The Governor's guidance to both the FWQA

Regional Directors and to his committee indicated his concern for protection of Montana's environment and for development of adequate programs to attain that goal.

In addition, it should also be noted that efforts are underway in the State of Montana to consider organizational structure of the whole of State government toward the end of consolidation, coordination, and improved efficiency of governmental services. The State pollution control budget and staff resources have been recommended for substantial increases in the State budget, also. Since the outcome of these proposals cannot be know, the FWQA evaluation and recommendations must be based on existing conditions. It is hoped that this report will contribute to the shape of decisions on reorganization and assignment of State resources to environmental protection programs.

ACKNOWLEDGMENTS

The FWQA gratefully acknowledges the assistance of the many officials and citizens of the State of Montana who readily cooperated in providing information and opinions on programs for water quality control in Montana. In particular, the Director and staff of the Montana State Department of Health devoted themselves generously to assisting in the study. In addition, FWQA gratefully acknowledges the considerate and helpful cooperation provided by the many State legislators, public officials, and citizens having responsibility or interest in water quality in Montana who were interviewed by the FWQA staff members. (A list of those interviewed is appended to this report). All those having concern or interest in the water quality programs of the State of Montana could not, of course, be interviewed. It is hoped that those individuals will also express themselves in the improvement and development of environmental protection programs in Montana.

RECOMMENDATIONS

Program budget and staff

1. The staff and budget assigned to the State water pollution control agency should be increased to a minimum of 17 personnel and $250,000 for immediate implementation of existing laws, and to a desirable level of over 30 personnel and over $400,000 for long-range water quality management under improved State laws. (It should be noted that possible economies could be realized if the water, air, and solid wastes programs were combined into one agency, allowing savings in laboratory equipment, administrative overhead, surveillance networks, etc.) The water pollution and/or environmental program budgets should be made separate and identifiable appropriations specifically identified by the Legislature.

2. A very high priority should be given to appropriation of State funds to a State construction grant program to provide tax relief to local communities in meeting their waste treatment requirements, and to permit full use of Montana's allotment of Federal construction grant funds with Federal grants covering 50 percent of the cost of treatment facilities.

Program organization

3. The State agency responsible for the day-to-day management and implementation of State water pollution control laws should be established as a separate and identifiable unit of State government with stature, authority and independence sufficient to allow an aggressive and authoritative prevention and abatement program. The water quality program should be coordinated or combined with State programs for air pollution, solid waste management and related environmental problems.

4. This State agency should be guided and directed by a policy-making council with authority to adopt rules and regulations, hold hearings, subpoena witnesses, issue orders, and perform other functions of a quasi-legislative-judicial body. The composition of this council should be representative of the people of Montana and their environmental protection needs, and its members should be charged with achieving the goals and objectives of water quality and environmental protection, conservation, and enhancement expressed in Montana law.

Program authority

5. The fundamental water pollution control laws of the State of Montana should be revised to clearly state the policies and goals of

water quality protection and enhancement, pollution abatement and prevention, as enunciated in policy pronouncements of the Montana Water Pollution Control Council.

6. The regulatory and enforcement authority of the State water pollution control program should be increased and improved to provide for:

--immediate injunctive power in the case of water quality emergencies endangering the health or welfare of Montana citizens;

--penalties for violation of State pollution control laws, regulations, and waste discharge permits; and

--clear identification of the responsible body to institute enforcement measures.

The State laws authorizing waste discharge permits should be modified to place the burden of proof upon the permit applicant.

7. State law should be amended or revised to remove obstacles to the issuance of bonds for construction of municipal sewage treatment works. The questions to be resolved include voter eligibility on bond issues and the salability of bonds due to State limits on interest rates.

8. The need for the activities of all State government to be conducted in consonance and coordination with the goals and requirements of State water quality and environmental laws and policies should be clearly established through State Executive Order to all State agencies.

9. The Dredge Mining and Land Preservation Act of 1969 should be amended to apply its protective provisions to all related activities, without exceptions.

10. State law should be enacted or amended as necessary to require subdivision developers to provide adequate waste handling plans or measures prior to sale of individual parts of the subdivison.

Program management

11. Additional staff and budget alloted to the Montana water pollution control program should be assigned to improvement in the use of the waste discharge permit system, with sufficient follow-through to insure compliance and enforcement, if necessary.

12. To support the waste discharge permit system, the agency's municipal and industrial waste treatment plant inspection activities should be expanded to provide at least semi-annual inspections of all facilities, with greater frequency in problem areas and for seasonal industries. Inspection checklists should be used to develop

complete and uniform data on each plant, and regular reporting should be required of plant operators.

13. The agency should concurrently expand and refine its water quality monitoring and surveillance network. The numbers of sampling stations should be increased, as well as sampling frequency and parameters. The system should be keyed to enforcement, permit compliance, standards and planning needs, beginning in known problem areas. Water quality data should be analyzed and submitted with recommendations to the State Water Resources Board as input to the State water plan.

14. A separate activity in the pollution control program should be designed to reduce pollution from land management practices in the State. In addition to regulations for pesticides and feedlots presently being developed, a comprehensive approach should be instituted with technical assistance, regulations, guidelines, and criteria provided to State agencies with programs affecting agriculture, forestry, road construction, economic development, mining and related fields. These State agencies should be required to include water quality protection needs in their programs by a State Executive Order.

15. The State water pollution control agency should undertake planning to meet pollution control needs in the most efficient and effective manner and should provide assistance to local planning efforts. Federal construction grant regulations require that all applicants soon be included in an approved plan to be eligible for Federal funds.

16. An improved program to achieve adequate operation and maintenance of treatment facilities in the State should be undertaken by the agency. Means of providing training to operators to develop and maintain adequate skills should be included in the program. An information program to educate the local government decision-makers on the need for operator training and provision of funds for adequate operation and maintenance of sewage treatment plants should be undertaken.

EVALUATION

Program staff and budget

The Montana water pollution control budget for fiscal year 1970 shows seven man-years devoted to the program. Only four of these man-years represent full-time staff, and one of these is provided by the Department of Fish and Game. Two of the seven man-years are district engineers in Kalispell and Billings, outside the central agency offices. The director of the Division of Environmental Sanitation has other assigned responsibilities and devotes approximately one-half of his time to water pollution.

Staffing plans for the current fiscal year (1971) indicate the same levels will continue. The budget request to support this staff is roughly $90,000 including a $40,000 FWQA State program grant to the agency. Additional Fish and Game Department funds support a biologist assigned to water pollution control. The State appropriation for the water quality program has never been specifically identified as such by the Montana State Legislature, and the funds assigned to the water quality program are decided by the Board of Health.

Although justifications for increased staff and budget levels should desirably be based upon specific program proposals, it seems obvious that, from most any criteria which could be applied, Montana has not yet assigned a critical nucleus of technical personnel to carry out even the most fundamental needs of pollution control in the State. Although the existing staff has accomplished a great deal despite their small numbers, their effectiveness has admittedly been limited to reactive, "fire-fighting" tasks as opposed to implementation of a well conceived and aggressive program of pollution abatement and prevention.

The agency staff has requested substantial increases for fiscal year 1972 which have received the unanimous support of the Montana Water Pollution Control Council and Board of Health. These recommended levels call for a minimum staff of 17, providing needed engineering, biology, chemistry, bacteriology, and technician staff to the program, and a budget of $250,000. As a minimum, these levels should be given strong support in their legislative consideration, although the need for legal and planning services to the agency should also be met.

As a comparison, the Public Administration Service in 1965 issued a study of guidelines and criteria for staff and budget of State water pollution control agencies, which has been updated to 1970 figures by the FWQA. Those adjusted figures recommend for Montana minimum staff of 24 and a desirable staffing level of 32, with

budgets in the $279,000-$410,000 range. Using this study as only a general guide, and considering the need for better definition of State program goals, policies and objectives before assignment of "desirable" staff levels, the FWQA recommends that the agency budget proposal for FY 1972 (17 personnel and $250,000) represents an adequate starting point. As recruitment processes begin to satisfy these staffing levels, the staff competence and administrative-managerial time available for adequate program planning should allow for the detailed justification for additional numbers and kinds of staff support needed to reach the more desirable program levels.

Program Organization

Organizationally, the water pollution control program exists as one of three sections in one of twelve divisions or functional units of the State Department of Health. Within the department, it must compete for administrative attention with the critically important State Health programs. And within the Division of Environmental Sanitation, water pollution control must compete with programs to regulate water supplies, licensing of restaurants, meat markets, foodplants, trailer and tourist camps, rodent and insect control, and others. Laboratory facilities assigned to the Division must serve all the functions of the division, including water pollution control. Figures 1 and 2 on the following pages illustrate the Department and Division organization.

The point to be made is not that the health and sanitation programs should be downgraded but that the pollution program lacks the breadth and depth necessary to satisfy today's environmental protection needs. Montana's pollution control program is charged with protection and maintenance of water quality to serve the many uses the public demands: domestic, municipal, and industrial water supplies, agricultural uses, fish and wildlife, recreation and other uses. These needs include but go far beyond the health and sanitation orientation of the present organization.

Organizational trends in other States and in the national programs illustrate the ways in which other governmental services are being grouped to meet the expanded and elevated purposes and needs of environmental programs. Oregon and Washington have both recently created separate departments, equal to but aside from health programs, for management of State environmental laws. Both States combined the water pollution programs with those of air pollution, solid wastes management, and related programs into departments of ecology and environmental quality. Similarly, the Federal Water Quality administration is currently undergoing reorganization by Presidential order which creates a national Environmental Protection Administration. In both their organizational stature and breadth of concern, these

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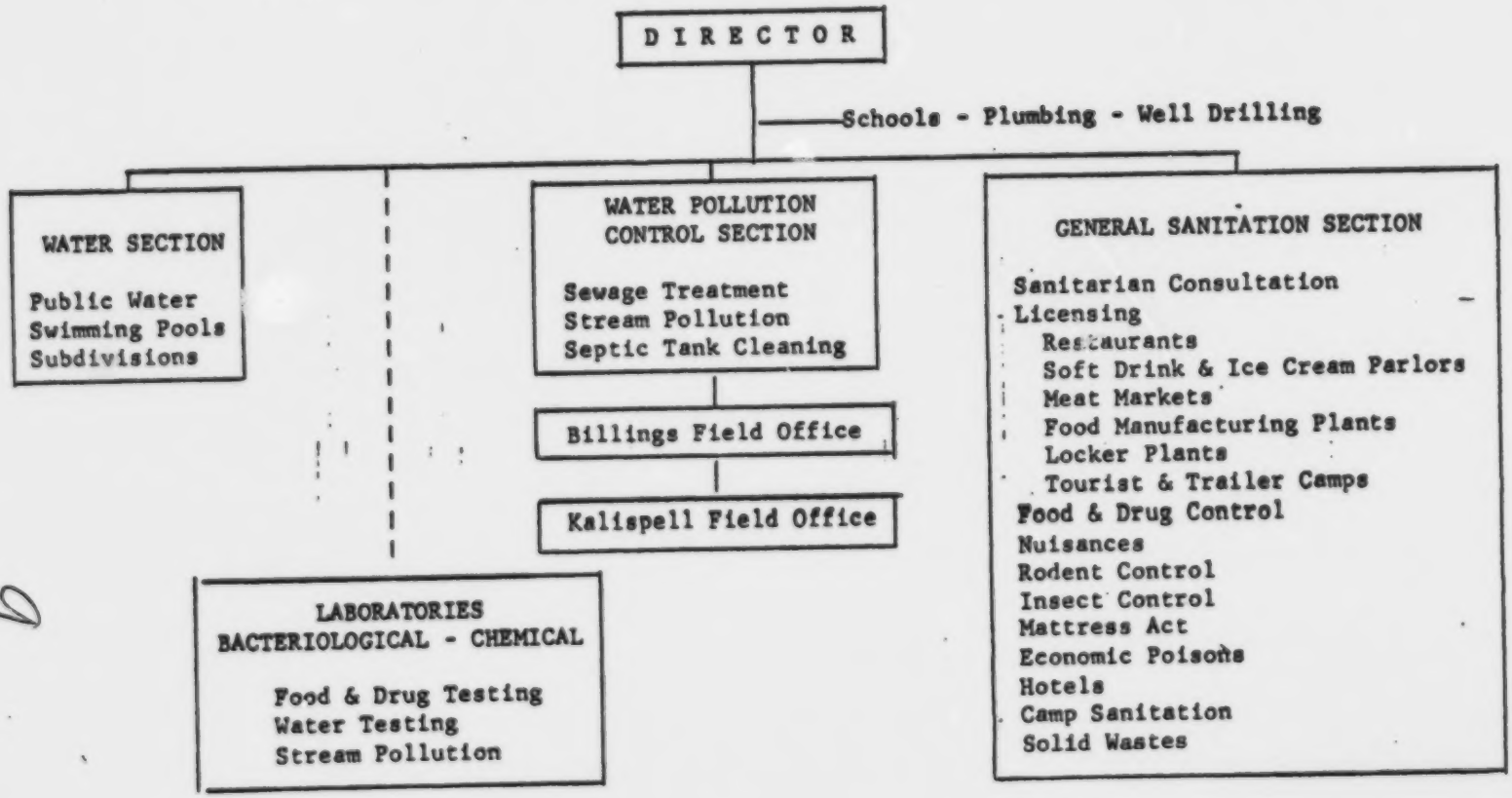
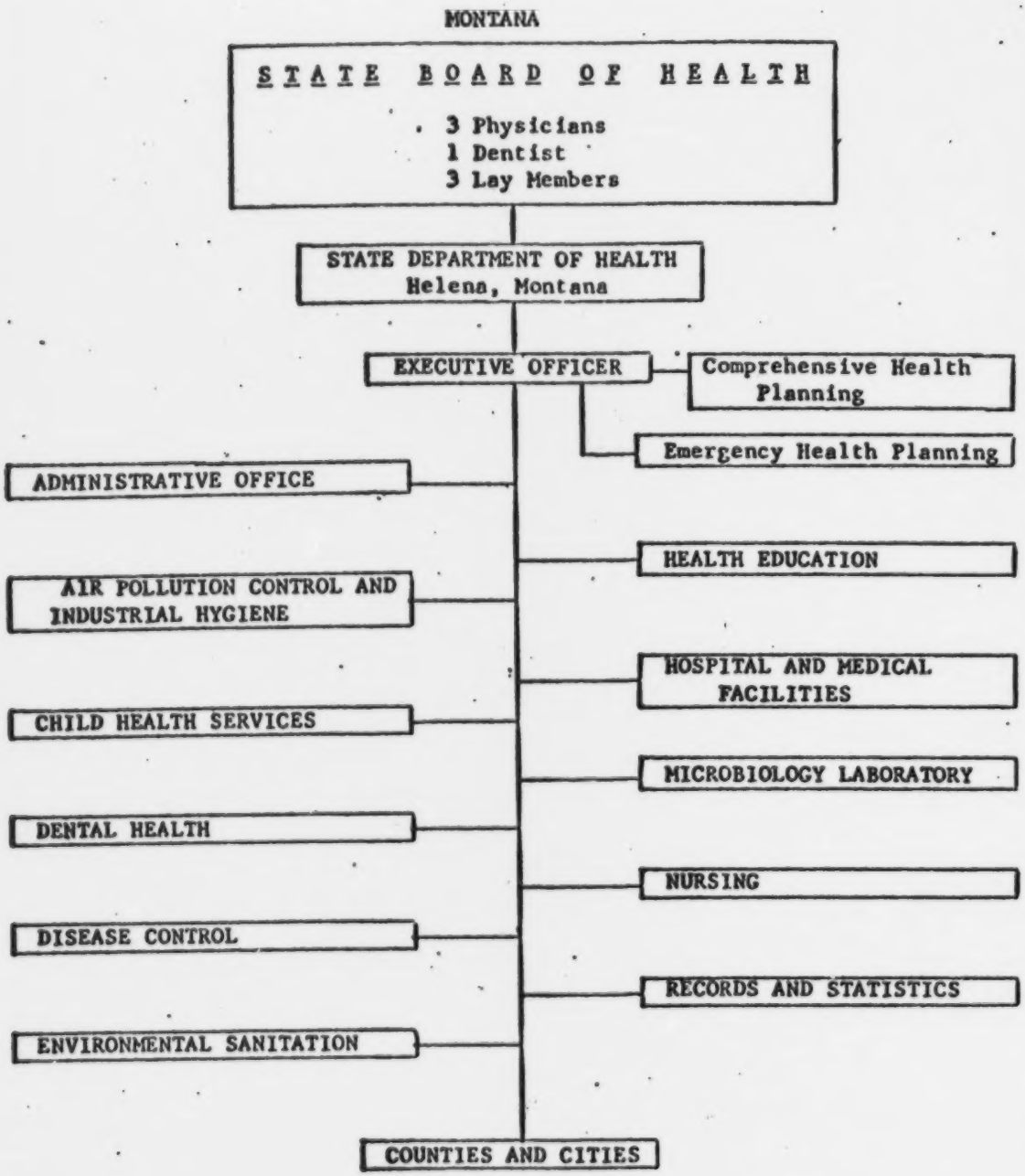
MONTANA
STATE BOARD OF HEALTH
STATE DEPARTMENT OF HEALTH

Division of Environmental Sanitation



ORGANIZATION CHART



examples represent desirable trends of governmental approaches to handling the environmental problems which face the Nation. The value and effectiveness of these approaches are worthy of consideration for the State of Montana.

Returning to the present Montana situation, there exists considerable confusion of lines of authority and responsibility between the governing bodies established to guide the pollution control program. Both the Montana State Board of Health and the Montana Water Pollution Control Council share in this function, and their roles are not clear. The duties of the Board and Council are detailed in the Montana Water Pollution Control Law attached to this report and will not be repeated here. However, it should be noted that both bodies may issue pollution abatement orders. Although the Council may adopt water quality standards and rules to guide in the aministration of the Water Pollution Control Law, the Board apparently is responsible for accomplishing the program through the Department of Health. However, the Council may use the staff services of the Board and Department in carrying out its duties. While the Board is charged to advise, consult, and cooperate with others in the formation of a comprehensive plan to control water pollution, the Council is empowered to adopt a comprehensive program for prevention of pollution. In short, the lines of authority and responsibility are confused to the point of inaction in program direction and planning, and disagreement over procedural lines results in delays even in emergency situations.

Further, neither body is representative of environmental protection interests. The seven members of the Board of Health are made up of three physicians, a dentist, and three lay members, all appointed by the Governor. The Council is by law constituted of gubernational appointees representing agriculture, organic industries, inorganic industries, and municipalities, and the heads of the Department of Health, Fish and Game, and Water Conservation Board. The result is that one of the State's policy and rule-making bodies for water pollution control is largely made up of representatives of the very polluters the laws are designed to regulate and control, and the other is consituted of citizens specifically trained and concerned in matters of health.

If the environmental protection objectives of the State of Montana are to be pursued actively and effectively, it would seem that the policy making body guiding the program should be constituted of a majority of members chosen from the Montana citizenry who have demonstrated knowledge and interest in those objectives and without vested interest in the economic or governmental sectors which will be subject to control by that body. Toward this end, the membership of the Pollution Control Council should be redefined by law to include

environmental protection and conservation interest and any governing functions relating to pollution control which presently reside with the Board of Health should be transferred to the new Council. The Board of Health's ultimate responsibility for certification of health protection measures should be protected in such a move.

Program Authority

In addition to confusion in the law over which governmental body is responsible for implementing it, the Montana Water Pollution Control Law lacks clarity and strength in two major respects: (1) policy guidance for pollution prevention, and (2) enforcement aurhority and tools. A copy of the law is attached to this report.

Pollution prevention policy--Despite the fact that the initial policy statements of the law refer to prevention of pollution, the position is weakened by the section on permits (69-4807). In this section, revocation of a permit is possible when violation of it causes damage to water use. The effect of this section, then, is to require the State agency to allow damages to occur and to prove those damages exist before corrective measures are taken. This position places a costly burden upon the State in terms of public pollution damages which would be allowed to occur, State investigation and legal costs to prove those damages, and added costs to the polluter to modify existing installations which could have included needed controls at the outset at less cost than plant modification. To follow through on its initial references to the prevention aspects of the State's law, a provision should be added which places the burden of proof upon the polluter for justification of any degree of pollution.

Enforcement authority--Confusion over whether the Montana Board of Health or Montana Pollution Control Council should or will issue an order results in inaction and delay in enforcement. The Board of Health has taken enforcement action on only one industry since 1967. And during an emergency situation in 1967 when a labor strike prevented operation of treatment facilities and toxic mining wastes were discharging to the Clark Fork River, the Fish and Game Department apparently was the only agency capable of taking emergency enforcement action. The pollution control law contains no penalities for failure to comply with an order of the Board or Council. In the face of these conditions, the credability and effectiveness of the entire pollution control program comes into question. The FWQA strongly recommends tha the Montana water pollution control law be modified to clearly identify the single governmental body responsible and capable of taking enforcement action, to provide immediate injunctive authority in emergency situations, and to provide penalties for failure to comply with the laws and regulations of the pollution control agency. Provision should be made for the courts to protect citizens from arbitrary or capricious action by the agency.

Aside from the Montana water pollution control law itself, other State laws which affect the program are creating obstacles to effective pollution control action. In particular, municipal waste treatment requirements and schedules to clean up even existing pollution are not being met by the cities due to difficulties in funding. As will be discussed later, the need for State appropriations for construction grants to aid cities in financing these facilities is paramount to solution of the problem, but two provisions of Montana law are creating unnecessary obstacles to issuance of municipal bonds and should receive legislative attention.

First, regarding voter eligibility on bond issues Montana law stipulates that property owners are the only voters eligible. Federal Supreme Court decisions would require that all eligible voters be included in the elective process, whether or not they own property. Until this question of the constitutionality of Montana bond elections is resolved, the sale of revenue bonds is in jeopardy. Thus, the clean up of municipal sewage problems would be facilitated by an early and voluntary change in the Montana law.

The second provision of Montana law hampering municipal treatment relates to State limits on the interest rates allowable on municipal bonds--presently six percent interest. Since higher rates are available to investors from other sources, the salability of municipal general obligation bonds is greatly reduced. Relaxation of the limits on these bonds, either temporarily or permanently, could greatly enhance the State municipal sewage treatment program.

Current procedures for development of subdivisions in the State of Montana create unnecessary workload and inadequate prevention of pollution problems. A developer presently is allowed to sell individual parcels of a subdivision without having provided waste collection and treatment plans or facilities. Each individual buyer, then, contacts the Board of Health for approval for his individual disposal system. Under these conditions, no consideration of whether the subdivision is wisely located is possible, and the economies and efficiencies of area-wide planning for waste collection and treatment are not possible. Further, each individual buyer's disposal system may be considered satisfactory, but the total residual wastes from all the buyers may create pollution problems which presently can be avoided only by denying permits to the last few applicants. In the interests of equity to the buyers and of pollution prevention in an efficient way, a State law to require land developers to provide the pollution control agency with adequate plans for protection of water quality should be enacted.

Finally, the Dredge Mining Regulation and Land Preservation Act, enacted in 1969 to protect the land and waters of the State from destructive dredge mining, is being challenged in the courts as

discriminatory since it specifically excepts many similar activities, such as gravel washing. In the interests of the stated purpose of this act and the Montana Water Pollution Control law, the legislature should remove the questioned exceptions from the Dredge Mining act to apply its protective provisions to all similar activities which might detrimentally affect the quality and utility of the State's streams and lands.

Water Quality Standards--The importance of water quality standards to the program authority of the Montana water pollution control program should be recognized. Montana's present standards and implementation plan were developed in response to the Federal Water Quality Act of 1965 and were approved by the Secretary of the Interior on February 29, 1968. The standards include stringent criteria suitable to the headwater nature of Montana's streams and a plan of implementation for installation of required treatment. Standards policies include a minimum requirement of secondary treatment or its equivalent for all cities and industries to be installed by July 1972, and an anti-degradation policy to protect the high quality waters in the State from arbitrary degradation to the standards criteria. The standards establish a sound legal or institutional framework within which the State can work with cities, industries, and other agencies in meeting its objectives of pollution control. The success of the standards, however, is jeopardized by the weakness in enforcement authority, lack of manpower and budget, and financing difficulties for municipal treatment works discussed in this report.

Program Management

The remainder of this report presents a description and evaluation of the major water pollution control program functions, or subprograms, which are necessary to a strong and effective total program. The budget, staff, authority, and organizational difficulties discussed heretofore will necessarily require solution before these functions can be brought into full effectiveness. The functions are discussed roughly in priority order.

1. State matching construtution grant program. A State program to participate with Federal and local governments in financing needed municipal sewage treatment works was authorized in 1969, but was not funded. The effect has been to retard municipal construction further, as cities delay construction plans in hopes of receiving State funds.

The legislature should appropriate funds to the program as a very high priority need to meeting existing pollution problems and for avoidance of long-term municipal pollution problems in the future. Present indications are that municipalities, required in water quality standards to install secondary treatment by July 1, 1972, will not meet those schedules due to funding difficulties. At the

same time, however, it should be recognized that over $5 million of Federal construction grant funds available to Montana was not applied for and was redistributed for use by other States in the period 1964-69.

FWQA CONSTRUCTION GRANT ALLOTMENTS AND USE
MONTANA 1964-69

Fiscal Year	Allotted	Utilized	Not Used*
1964	$1,080,150	$ 203,605	$ 876,545
1965	1,086,850	101,320	985,530
1966	1,201,560	719,760	481,800
1967	1,272,700	297,503	975,197
1968	1,478,900	700,190	778,710
1969	1,540,000	480,226	1,059,774
	$7,660,160	$2,502,604	$5,157,556

*Funds not used in Montana were distributed to other States.

The State matching grant program would be of benefit to both the State and the local governments, since the Federal share would be increased from its present level of 30 percent of project costs to 50 percent. Likelihood of voter approval in bond issues would be increased, since the voters would be considering approval of only 25 percent of the total costs of their treatment project (with the State providing 25 percent, and the Federal government 50 percent). In areas covered by approved comprehensive plans, the Federal share would increase to 55 percent, leaving the community to raise 20 percent to construct its treatment works. In this sense the State matching grant would amount to local tax relief which could be made effective July 1, 1970, even if funded by the legislature at some later date in fiscal year 1971. The State municipal pollution problems could then be rectified and Federal funds available to Montana could be fully utilized.

2. Waste discharge permit system. The State pollution control law requires all municipal and industrial waste discharges to be covered by a current permit issued by the Board of Health. Despite its proven effectiveness as a management and enforcement tool in other States, the program has been weak in Montana since budget and staff to implement it were not provided. The program is essentially conducted in the office without adequate followup with water quality monitoring and plant inspections.

As a very high priority, added budget and staff should be provided for a stringent permit system and vigorous enforcement of compliance.

3. Municipal and industrial inspections. In its use of limited manpower, the State pollution control agency has recognized the need for and value of inspections to assure adequate treatment, operation, and maintenance, and an effort is made to inspect each municipal plant each year. Sheer numbers of facilities to be inspected by the three or four engineers available (who are also responsible for the remainder of the programs) necessitates a less than desirable depth of inspection. Inspection checklists or forms are not used to insure complete and uniform evaluation of all the significant features of the plants, and testing of plant efficiency and effluent is not done, in most cases.

In the assignment of additional manpower to the program, a very high priority should be given to improving the inspection program. Every municipal and industrial treatment facility in the State should be inspected and tested at least semi-annually, with more frequent inspections for seasonal operations. In addition, each facility should be required to submit regular reports of plant effluent (flow, BOD, disinfection), the receiving stream effects, and equipment and laboratory records. These reports should receive adequate review and analysis by the agency to assure compliance with permits and standards and to be used as a guide in scheduling inspections.

4. Water quality monitoring program. Water quality data collection and analysis in the State of Montana is admittedly inadequate, again due to insufficient staff and budget and laboratory facilities. The State currently maintains only fifteen sampling stations, none of which are sampled on a daily basis. Six are monitored monthly, about nine quarterly. Analysis is provided by a Division laboratory servicing other State programs.

There is an urgent need to finance an expansion of the water quality monitoring network in the State to assure the adequacy of and compliance with the State's water quality standards and waste discharge permits. Additional stations should be monitored and sampled with greater frequency, beginning in known problem areas. Each station should be sampled at least monthly, and key stations sampled daily or weekly. The parameters at each stations should be appropriate to the special problems encountered and should generally conform to standards needs. In the long run, achievement of an adequate program in Montana will require a pollution control laboratory facility with a multi-disciplined staff, including biologists, chemists, bacteriologists, technicians, and clerical staff.

5. Land management program. The effects of land management practices upon water quality are not subject to the usual engineering solution traditionally applied in pollution control programs. However, the damages incurred by erosion from over-grazing, drainage from animal feedlots, pesticides, salts, sediments and other pollutants in irrigation return flows, watershed disruption during logging, road building, and mining, and pollution from mine drainage can and must be prevented through regulation and controls required by the pollution control program. Pesticides and feedlot regulations have been or are being developed, but the land management program should also be approached in a more comprehensive fashion.

An effective approach to control of these problems is tc utilize the existing talents and authorities of the whole of State government. which already are working in the areas of forestry, agriculture, road construction, etc., to implement regulations and requirements to meet water quality objectives concurrently with their present missions. Water quality protection practices should be required in all State contracts and permits for land management practices and all State land managers should be directed and trained to institute protective measures.

6. Water quality management planning. Planning for water quality control in Montana has been nearly non-existent. The Montana Water Resources Board is developing a State Water Plan, including discussion of water uses which are dependent upon and determined by water quality. The Water Resources Board has looked to the Department of Health for the necessary input on water quality, but that input has been negligible since the Department has lacked the monitoring network and planning capability to assist.

FWQA regulations require that all recipients be included in an approved water pollution control plan for the State or local area to be eligible for Federal waste treatment construction grants. The State pollution control agency must develop such plans or assist local planning effort in the development of them. Expansion of the staff and budget of the water pollution control program should include provision of planning capability for water quality management.

7. Operation and Maintenance. Regulations issued by the State pollution control program require adequate assurance of proper operation and maintenance of all waste treatment facilities for which a permit is issued. Compliance with these assurances is not enforced, however, again due to manpower limitations to institute such a program. Penalties for permit violations are not authorized. A program of operating inspections, required operating reports and analysis, enforcement and follow-through is needed.

Concurrently, operator training programs are needed in the State to develop a force of skilled plant operators and to maintain those skills. The State program requires operator certification, but the grandfather clause certified most of the State's present operators. Federal agency assistance and funds to the State in meeting these training needs could be made available through contacts with the FWQA training office in Corvallis, Oregon.

An important element of the operation and maintenance program will be to provide educational information services to the local government officials who must ultimately be held responsible for the adequacy of operation and maintenance of sewage treatment plants. The local treatment plant budgets must provide funds for adequate operation and maintenance records, tests, and equipment renewal and repair. The operators themselves must be given time and funds to attend training courses to upgrade and maintain their skills. The local decision-makers and the public can be alerted to these needs and State agency requirements through information services.

8. Interagency coordination. During many of the interviews conducted by the FWQA evaluation team, there were repeated references to the need for improvement of State interagency coordination on water quality and related matters in Montana. It seems likely that the Governor's committee considering reorganization of all of Montana State government will give particular attention to remedying these coordination difficulties. Until such reorganization is consummated, and possibly even thereafter, a special effort will be needed on the part of agency heads to cooperate in the coordination of related programs which affect State water quality programs and policies. An executive order issued by the Governor would provide a direct and immediate framework to effect and stimulate the improvement of these interagency coordination needs.

APPENDIX

Appended materials are in the following order:

List of persons interviewed

Montana Water Quality Standards

Water Pollution Control in Montana

Montana Water Pollution Control Law

Dredge Mining Regulation and Land Preservation Act

Montana Laws regarding subdivision

Approval of Water and Sewer Facilities in Subdivision

Waste Disposal Permit Regulation

Application for Waste Disposal Permit

PERSONS INTERVIEWED BY FWQA REPRESENTATIVES
SUMMER 1970

John E. Acord, Planning Director, Montana Water Resources Board

Donald Aldrich, Executive Secretary, Montana Wildlife Federation

John M. Anderson, M. D., Executive Officer, Montana State Board of Health and State Department of Health

William H. Bertsche, State Senator

Ralph Boland, Biologist, Montana Fish and Game Department and State Department of Health

George L. Bousliman, Deputy Director, Montana Commission on Executive Reorganization

Shirley Breitenstein (Mrs. Bryce D.,) Montana Wildlife Federation

Clairborne W. Brinck, Director, Division of Environmental Sanitation State Department of Health, and Secretary, Montana Water Pollution Control Council, State Board of Health

George Darrow, Geologist (former State Representative) and Chm. Environmental Health Subcommittee of the Comprehensive Health Planning Committee (Appointed by the Governor)

Charles H. Dickman, Assistant Attorney General (assigned to State Department of Health)

C. R. Draper, Department of Planning and Economic Development

Frank H. Dunkle, Director, Montana Fish and Game Department

Walt Everin, Department of Fish and Game

Larry Fasbender, State Representative

Chris Field, University of Montana

Elmer Flynn, State Senator

Mills Folsom, State Senator

H. W. Gabriel, University of Montana

John Harris, University of Montana

James M. Haughey, State Senator

William (Bill) S. Mather, State Representative

Harry B. Mitchell, State Senator

R. (Bob) F. Payne, State Representative

James Richards, Department of Planning and Economic Development

Perry F. Roys, Executive Director, Department of Planning and Economic Development

Lon Schenarts, U. S. Forest Service

Nancy Shaw, Montana Wildlife Federation

John C. Sheehy, State Senator

Douglas G. Smith, Director, Montana Water Resources Board and Chairman, Council on Natural Resources

Lester R. Susoff, University of Montana Law School

Marilyn Templeton, GASP

Nels Thorsen, Montana Fish and Game

James Van Koten, Director, Montana Legislative Council, and Chris McKeon, Staff, Montana Legislative Council

Art Whitney, Chief, Fisheries Division, Fish and Game Department

Don Willems, State Department of Health

State of Montana

State Department of Health

JOHN S. ANDERSON, M.D.
EXECUTIVE OFFICER

HELENA, MONTANA

TO: Persons Receiving Montana Water Quality Criteria, Water Use Classifications and Policy Statements

Attached are "Water Quality Criteria", "Water Use Classifications", and "Policy Statements" as adopted by the Montana Water Pollution Control Council, together with a map of the surface water classifications to facilitate understanding these classifications.

Since the original adoption of these standards, and at the request of the Federal Water Pollution Control Administration, an additional policy statement has been added by the Montana Water Pollution Control Council. This statement reads:

> "Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at that high quality unless it has been affirmatively demonstrated to the state that a change is justifiable as a result of necessary economic or social development and will not preclude present and anticipated use of such waters. Any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required to provide the necessary degree of waste treatment to maintain high water quality. In implementing this policy, the Secretary of the Interior will be kept advised in order to discharge his responsibilities under the Federal Water Pollution Control Act, as amended."

It is felt that with these water quality standards, the clean waters in Montana will be maintained and those waters that are currently degraded will be improved to meet the criteria established. It is the intent of this office, through our control program and the standards, to maintain the best water possible in Montana.

Yours very truly,

Claiborne W. Brinck

Claiborne W. Brinck, Director
Division of Environmental Sanitation

CWB/aad

Enclosures

ADOPTED BY THE NEVADA WATER POLLUTION CONTROL COUNCIL, OCTOBER 5, 1967.

STATE OF NEVADA WATER POLLUTION CONTROL COUNCIL

WATER QUALITY CRITERIA

APPLICABLE AFTER REASONABLE OPPORTUNITY FOR DISCHARGERS TO ADJUST WITH RECEIVING WATERS AS DETERMINED BY THE NEVADA WATER POLLUTION CONTROL COUNCIL.

NOTE: QUALITATIVE AND QUANTITATIVE EVALUATION OF WATER SAMPLES FOR COMPARISON WITH THESE CRITERIA SHOULD BE MADE IN ACCORDANCE WITH PROCEDURES SET FORTH IN THE LATEST EDITION OF "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", APHA, AWWA, AND WPCF, 1965.

WATER QUALITY CRITERIA	REMARKS IF THE COLIFORM GROUP OF THE MOST PROBABLE NUMBER IS EXCEEDED, LIGHT BROWNISH FILTER DEPOSIT, 300-350 NOT CONSECUTIVE 24-HOUR PERIOD, NO MORE THAN 3 UNSATISFACTORY PERIODS IN SAMPLES, SMALL	DISSOLVED OXYGEN MILLIGRAMS PER LITER (MG/L)	pH	TURBIDITY	TEMPERATURE °F	NUTRIENTS	PESTICIDES	TOXIC OR OTHER DELETERIOUS SUBSTANCES	RADIOACTIVITY	AESTHETIC CONSIDERATIONS NOT COVERED UNDER OTHER WATER QUALITY CRITERIA
A-1	AVERAGE LESS THAN 50 PER 100 MILLILITERS (50/100 ML).									
A-1(SAND), WATER SUPPLY FOR DOMESTIC, TILLAGE AND FOOD PROCESSING PURPOSES REQUIRING ONLY CHLORINATION FOR PROTECTION										
PUBLIC ACCESS AND ACTIVITIES SUCH AS LIVESTOCK GRAZING, AND FISHED BATHERY SHOULD BE STRICTLY CONTROLLED UNDER CONDITIONS PRESCRIBED BY THE STATE BOARD OF HEALTH.		NOT APPLICABLE	NO CHANGE IN NATURAL pH SHALL BE ALLOWED.	NONE	NONE	NONE	NONE			
A-2(SAND), WATER SUPPLY FOR DOMESTIC, TILLAGE AND FOOD PROCESSING PURPOSES REQUIRING ONLY CHLORINATION AND FILTRATION OR EQUIVALENT DISINFECTION AND REMOVAL OF NATURALLY PRESENT IMPURITIES.	AVERAGE LESS THAN 50 AND NO MORE THAN 240 PER 100 ML WHEN DETERMINED BY THE RESULT OF PORTIC SERIES.	NOT APPLICABLE	6.5 TO 8.5	SAME AS FOR "A-(SAND)" ABOVE.	NOT APPLICABLE	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "A-(SAND)" ABOVE.	CONCENTRATION OF CHEMICAL CONSTITUENTS SHALL CONFORM WITH THE 1962 U. S. PUBLIC HEALTH SERVICE DRINKING WATER STANDARDS (REVISED THEREAFTER) WHERE STANDARDS SHALL BE LIMITED TO AN INCREASE OF NOT MORE THAN TEN PERCENT OF THE CONCENTRATION PRESENT IN THE RECEIVING WATER.	CONCENTRATION OF RADIOACTIVE SUBSTANCES SHALL CONFORM WITH THE 1962 U.S. PUBLIC HEALTH SERVICE DRINKING WATER STANDARDS.	(1) WATERS SHALL BE FREE FROM SUBSTANCES IN CONCENTRATIONS OR COMBINATIONS WHICH ARE TOXIC TO HUMAN, ANIMAL, OR AQUATIC LIFE. (2) DISSOLVED OXYGEN SHALL NOT BE DEPLETED BELOW 5.0 MG/L. (3) WATERS SHALL NOT CONTAIN MATERIALS IN CONCENTRATIONS WHICH FORM DEPOSITS, PRODUCE OBJECTIONABLE SHORELINE GROWTHS OR EXCESSIVE GROWTHS OF PLANKTON.
B. WATER SUPPLY FOR BATHING, TILLAGE AND FOOD PROCESSING PURPOSES REQUIRING ONLY CHLORINATION, COAGULATION, SEDIMENTATION, FILTRATION, DISINFECTION, AND ANY ADDITIONAL TREATMENT TO REMOVE NATURALLY PRESENT IMPURITIES.	AVERAGE LESS THAN 1000/100 ML WHEN DETERMINED BY THE MPN RESULT OF BACTERIAL DENSITY, WITH NOT MORE THAN 20 PERCENT OF THE SAMPLES EXCEEDING 5000 VALUE.	NOT APPLICABLE	6.5 TO 8.5	NONE IN SUFFICIENT QUANTITIES TO AESTHETICALLY AFFECT DESIRABLE LEVELS OF TREATMENT.	NOT APPLICABLE	NONE IN SUFFICIENT QUANTITIES TO AESTHETICALLY AFFECT DESIRABLE LEVELS OF TREATMENT.	NONE IN SUFFICIENT QUANTITIES TO AESTHETICALLY AFFECT DESIRABLE LEVELS OF TREATMENT.	CONCENTRATION OF CHEMICAL CONSTITUENTS SHALL CONFORM WITH THE 1962 U.S. PUBLIC HEALTH SERVICE DRINKING WATER STANDARDS AFTER CONVENTIONAL TREATMENT.	SAME AS FOR "A-(SAND)" ABOVE.	(1) WATERS (INCLUDING MINERAL CONSTITUENTS AND TURBIDITY COLOR) OPERATIVE TO THE BENEFICIAL USES OF DOMESTIC, FOOD, AND AGRICULTURAL SUPPLY, TOXICS, SHALL BE TASTE, BUT HYDROCARBONS TO NATURAL ORIGINS, SHALL BE ALLOWED.
C. BOATING, FISHING AND WILDLIFE.	SAME AS FOR "B" ABOVE.	NOT APPLICABLE	SAME AS FOR "B" ABOVE	10 JTU	NOT APPLICABLE	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "A-(SAND)" ABOVE.	CONCENTRATION OF CHEMICAL CONSTITUENTS SHALL BE MAINTAINED BELOW LEVELS HARMFUL TO BE OF PUBLIC HEALTH SIGNIFICANCE.	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "B" ABOVE.
C-1. BOATING AND PROPAGATION OF BALANCED FISHES AND ASSOCIATED AQUATIC LIFE, WATERFOWL AND FURBEARERS.	SAME AS FOR "B" ABOVE.	7 MG/L	SAME AS FOR "A-(SAND)" ABOVE	5 JTU	DEPARTURES: 32° TO 65°: 4° MAXIMUM RISE 65° - 0.5° MAX. DEPARTURES: OVER 55° - 4° PER HOUR 55° TO 32°: 2° MAXIMUM PROVIDED THAT WATER TEMPERATURES MUST BE ALLOWED NOT INTERFERE WITH THE MIGRATION AND ASSOCIATED AQUATIC LIFE.	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "A-(SAND)" ABOVE.	WATERS ALLOWABLE CONCENTRATIONS SHALL BE LESS THAN ACUTE OR TOXIC PROVIDED LEVELS AS APPROVED BY ECONOMIC PLANS AND PLANS BEFORE THE DESIGNED REDUCTION FACTORS, TIMES MAXIMUM PERMISSIBLE LEVELS SHALL BE REDUCED BELOW ACUTE OR TOXIC PROVIDED LEVELS.	SAME AS FOR "A-(SAND)" ABOVE, EXCEPT WHERE CONCENTRATION FACTORS OF AQUATIC PLANS AND PLANS BEFORE THE DESIGNED REDUCTION FACTORS, TIMES MAXIMUM PERMISSIBLE LEVELS SHALL BE REDUCED BELOW ACUTE OR TOXIC PROVIDED LEVELS.	(1) WATERS (INCLUDING MINERAL CONSTITUENTS AND TURBIDITY COLOR) OPERATIVE TO THE BENEFICIAL USES OF DOMESTIC, FOOD, AGRICULTURAL SUPPLY, TOXICS, SHALL BE TASTE, BUT HYDROCARBONS TO NATURAL ORIGINS, SHALL BE ALLOWED. (2) DISSOLVED OXYGEN SHALL NOT BE DEPLETED BELOW 5.0 MG/L. (3) WATERS SHALL NOT CONTAIN MATERIALS IN CONCENTRATIONS WHICH FORM DEPOSITS, PRODUCE OBJECTIONABLE SHORELINE GROWTHS OR EXCESSIVE GROWTHS OF NUISANCE ALGAE.
C-2. BOATING AND RECREATIONAL PROPAGATION OF BALANCED FISHES AND ASSOCIATED AQUATIC LIFE, WATERFOWL AND FURBEARERS.	SAME AS FOR "B" ABOVE.	5 MG/L	6.5 TO 9.0	SAME AS FOR "C" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.
D-1. BOATING AND PROPAGATION OF NON-BALANCED FISHES AND ASSOCIATED AQUATIC LIFE, WATERFOWL AND FURBEARERS.	SAME AS FOR "B" ABOVE.	3 MG/L	SAME AS FOR "B" ABOVE	SAME AS FOR "C" ABOVE.	DEPARTURES: 32° TO 55°: 4° MAXIMUM RISE 55° - 0.5° MAX. DEPARTURES: SAME AS FOR "C-1" ABOVE. PROVIDED THAT WATER TEMPERATURES MUST BE ALLOWED NOT INTERFERE WITH THE MIGRATION AND ASSOCIATED AQUATIC LIFE.	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.	SAME AS FOR "C-1" ABOVE.
E. AGRICULTURAL WATER SUPPLY INCLUDING IRRIGATION, STOCK WATERING AND WILDLIFE.	SAME AS FOR "B" ABOVE.	NOT APPLICABLE	SAME AS FOR "B" ABOVE.	NONE IN SUFFICIENT QUANTITIES TO AESTHETICALLY AFFECT THE USE DESIGNED.	NOT APPLICABLE	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "A-(SAND)" ABOVE.	CONCENTRATION SHALL BE LESS THAN THOSE DETERMINED TO BE HAZARDOUS TO LIVESTOCK OR PLANTS OR THOSE DETRIMENTAL TO CROPS.	SAME AS FOR "A-(SAND)" ABOVE.	WATER SHALL BE MAINTAINED IN A CONDITION SUCH SUITABLE TO THE NEEDS OF STOCK AND WILDLIFE.
F. INDUSTRIAL WATER SUPPLY (OTHER THAN FOOD PROCESSING).	NOT APPLICABLE.	NOT APPLICABLE	SAME AS FOR "E" ABOVE	SAME AS FOR "E" ABOVE.	NONE IN SUFFICIENT QUANTITIES TO AESTHETICALLY AFFECT THE USE DESIGNED.	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "E" ABOVE.	NONE IN SUFFICIENT QUANTITIES TO AESTHETICALLY AFFECT THE USE DESIGNED.	SAME AS FOR "A-(SAND)" ABOVE.	SAME AS FOR "E" ABOVE.

MONTANA STATE WATER POLLUTION CONTROL COUNCIL

POLICY STATEMENTS

1. Quality of waters classified for multiple use shall be governed by the most stringent criteria listed for any use.

2. The Council has classified as "A-Closed" only those waters on which access and other activities are presently controlled by the utility owner. If other uses are permitted by the utility owner, these waters shall be reclassified "A-Open" or lower. Conversely, waters in the "A-Open" classification, if shown to meet the "A-Closed" criteria, may be so classified by the Council at the request of the utility owner.

   Where "A-Open" water is used for swimming and other water contact sports, a higher degree of treatment may be required for potable water use.

3. The water quality standards are subject to revision (following public hearings and, in the case of interstate streams, concurrence of the Federal Water Pollution Control Administration) as technical data, surveillance programs, and technological advances make such revisions desirable. There are waters in the state on which little water quality data are presently available. Water quality criteria for these waters were established to protect existing and future water uses on the basis of the most representative information available.

   In some cases, particularly in eastern Montana, waters have been classified "B" and "C" where the upper ends of the streams will probably be suitable for this use while the lower ends will not. However, not enough data is available to determine where the "B" and "C" designation should be dropped. Whenever a water supply or swimming area is developed, the regulations and the advice of the State Board of Health should be acquired. As time permits, data will be obtained and the classifications reviewed.

4. As used in the Water Quality Criteria, the phrases "natural," "naturally present," and "naturally occurring" are defined as conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Waters below existing dams will be considered natural.

5. It is the intent of the criteria that the increase allowed (temperature for example) above natural conditions is the total allowable from all waste sources along the classified stream.

6. Although the water quality criteria specify minimum dissolved oxygen concentrations, it shall be the policy of the Council to require the best practicable treatment or control of all oxygen-consuming wastes in order to maintain dissolved oxygen in the receiving waters at the highest possible level above the specified minimums.

7. For treatment plant design purposes, stream flow dilution requirements shall be based on the minimum consecutive 7-day average flow which may be expected to occur on the average once in 10 years.

8. Where sampling stations and points of mixing of discharges with receiving waters as mentioned in the water quality criteria are to be established on interstate waters, the concurrence of the Federal Water Pollution Control Administration will be solicited.

9. It is not the intent of these criteria to provide for a swimming water immediately below an existing treated domestic sewage outfall.

10. Where common treatment is practicable, it is the policy of the Council to restrict the number of sewer outfalls to a minimum.

11. Tests or analytical procedures to determine compliance with standards will, insofar as practicable and applicable, be made in accordance with the methods given in the twelfth edition of "Standard Methods for the Examination of Water and Waste Water" published by the American Public Health Association, et al, or in accordance with tests or analytical procedures that have been found to be equal or more applicable.

12. Because of conflicting testimony, it is the intent of the Water Pollution Control Council to obtain additional information on temperatures and fisheries on waters below existing steam generating stations at Billings and Sidney on the Yellowstone River. This can probably be best accomplished by a cooperative study between the utility, State Fish and Game Department, Federal Water Pollution Control Administration, and the Montana State Department of Health.

13. Insufficient information is available for establishing fixed sediment criteria at this time. Until standards can be set, reasonable measures, as defined by the Water Pollution Control Council, must be taken to minimize sedimentation from man's activities.

MINIMUM TREATMENT REQUIREMENTS

1. Domestic sewage -- the minimum treatment required for domestic sewage shall be secondary treatment or its equivalent with the understanding that properly designed and operated sewage lagoons will meet this requirement.

2. Industrial wastes -- the minimum treatment required for industrial wastes shall be secondary treatment or its equivalent.

WATER USE DESCRIPTIONS AND APPLICATION

Water use classifications assigned to the Columbia and Missouri Basin and the Hudson Bay drainage in Montana are described as follows:

"A-Closed"--Water supply for drinking, culinary, and food processing purposes, suitable for use after simple disinfection. Public access and activities such as livestock grazing and timber harvest should be strictly controlled under conditions prescribed by the State Board of Health.

The Council has classified as "A-Closed" only those waters on which access is presently controlled by the utility owner. If other uses are permitted by the utility owner, these waters shall be reclassified "A-Open-D_1" or lower.

"A-Open-D_1"--Water supply for drinking, culinary, and food processing purposes suitable for use after simple disinfection and removal of naturally present impurities. Water quality shall also be maintained suitable for the use of these waters for bathing, swimming and recreation (See "Note" below), (where these waters are used for swimming and other water contact sports, a higher degree of treatment may be required for potable water use); growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; agricultural and industrial water supply. Therefore, these waters shall be held suitable for "A-Open", "C", "D", "E", and "F" uses but may not necessarily be used for all such purposes.

Waters in this class, if shown to meet the "A-Closed" criteria, may be so classified by the Council at the request of the utility owner.

All waters within the boundaries of national parks and nationally designated wilderness, wild, or primitive areas in Montana are classified "A-Open-D_1" except those adjacent to developed areas such as Snyder Creek through the community of Lake McDonald and Swiftcurrent Creek below the Many Glacier Chalet, both in Glacier National Park. Also, Georgetown, Flathead, and Whitefish Lakes and Lake Mary Ronan are classified as "A-Open-D_1" as are some streams presently used for domestic water supply.

Note: Common sense dictates that swimming and other water contact sports are inadvisable within a reasonable distance downstream from sewage treatment facility outfalls.

"B-D_1" The quality of these waters shall be maintained suitable for drinking, culinary and food processing purposes after adequate treatment equal to coagulation, sedimentation, filtration, disinfection, and any additional treatment necessary to remove naturally present impurities; bathing, swimming, and recreation (see Note under "A-Open-D_1"); growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; agricultural and industrial water supply. Therefore, "B-D_1" equals "B", "C", "D_1", "E", and "F".

"B-D_2" The quality of these waters shall be maintained suitable for the uses described for "B-D_1" waters except that the fisheries use shall be described as follows:

> "Growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers."

Therefore, "B-D_2" equals "B", "C", "D_2", "E", and "F".

"B-D_3" The quality of these waters shall be maintained suitable for the uses described for "B-D_1" waters except that the fisheries use shall be described as follows:

> "Growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers."

Therefore, "B-D_3" equals "B", "C", "D_3", "E", and "F".

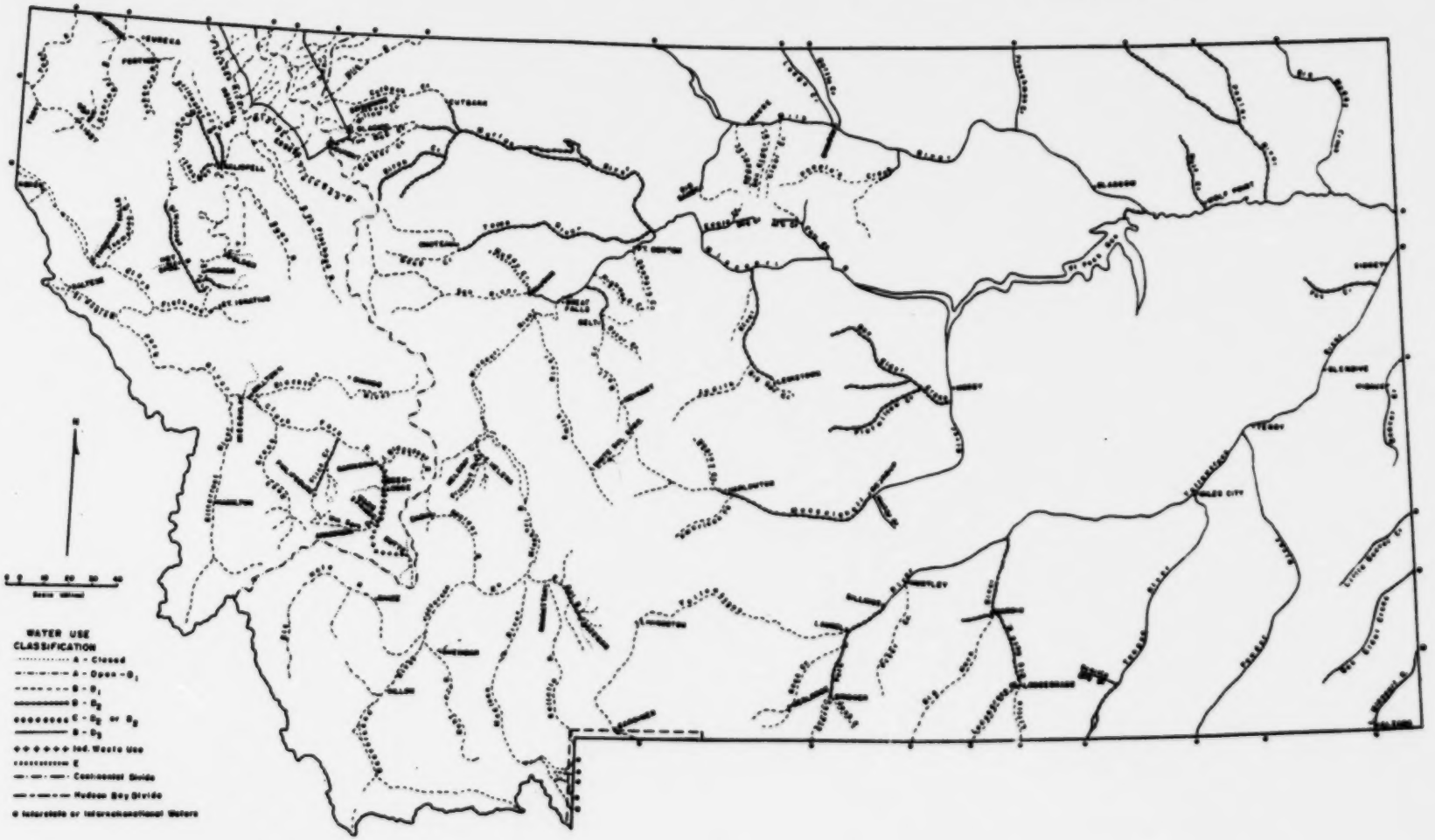
"C-D_2" The quality of these waters shall be maintained suitable for bathing, swimming, and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; agricultural and industrial water supply. Therefore, "C-D_2" equals "C", "D2", "E", and "F".

"D_2" The quality of these waters shall be maintained for growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; agricultural and industrial water supply. Therefore, "D_2" equals "D_2", "E", and "F".

"E" The quality of these waters shall be maintained for agricultural and industrial water supply uses and "E" shall equal "E" and "F" uses.

"F" The quality of these waters shall be maintained suitable for industrial water supply uses, other than food processing.

MONTANA WATER POLLUTION CONTROL COUNCIL - SURFACE WATER USE CLASSIFICATIONS OF MONTANA, OCT. 5, 1967.



WATER USE CLASSIFICATION

COLUMBIA BASIN

Clark Fork River Drainage

Clark Fork River:

Warm Springs Drainage to Myers Dam	A-Open-D_1
Remainder of Warm Springs Drainage	B-D_1
Silver Bow Creek (mainstem) from the confluence of Yankee Doodle and Blacktail Deer Creeks to Warm Springs Creek	For industrial waste use.
Yankee Doodle Creek Drainage to and including the Butte water supply reservoir	A-Closed
Remainder of Yankee Doodle Creek Drainage	B-D_1
Blacktail Deer Creek Drainage except portion of Basin Creek listed below:	B-D_1
Basin Creek Drainage to and including the Butte water supply reservoir	A-Closed
Remainder of Basin Creek Drainage	B-D_1
All other tributaries to Silver Bow Creek from the confluence of Yankee Doodle and Blacktail Deer Creeks to Warm Springs Creek	B-D_1
Clark Fork River (mainstem) from Warm Springs Creek to the Little Blackfoot River	C-D_2
Tin Cup Joe Creek Drainage to the Deer Lodge water supply intake	A-Closed
Remainder of Tin Cup Joe Drainage	B-D_1
Clark Fork River Drainage from the Little Blackfoot River to the Idaho line except those portions of tributaries listed below:	B-D_1
Georgetown Lake and tributaries above Georgetown Dam	A-Open-D_1
Flint Creek Drainage from Georgetown Dam to the Farm-to-Market Highway No. 348 bridge about one mile west of Philipsburg except those portions of tributaries listed below:	B-D_1
Fred Burr Lake and headwaters from source to the outlet of the lake	A-Closed

Flint Creek (mainstem) from Farm-to-Market Highway No. 348 bridge about one mile west of Philipsburg to the Clark Fork River	B-D_2
South Boulder Creek Drainage to the Philipsburg water supply intake	A-Open-D_1
Remainder of South Boulder Drainage	B-D_1
All other tributaries to Flint Creek from F-to-M Highway 348 bridge to the Clark Fork River	B-D_1
Rattlesnake Drainage to the Missoula water supply intake	A-Closed
Remainder of Rattlesnake Drainage	B-D_1
Packer and Silver Creek Drainage (tributaries to the St. Regis River) to the Saltese water supply intakes	A-Open-D_1
Remainder of Packer and Silver Creek drainages	B-D_1
Ashley Creek Drainage to the Thompson Falls water supply intake	A-Closed
Remainder of Ashley Creek Drainage	B-D_1
Pilgrim Creek Drainage to the Noxon water supply intake	A-Open-D_1
Remainder of Pilgrim Creek Drainage	B-D_1
All tributaries of Clark Fork River not otherwise mentioned	B-D_1

Flathead River

Flathead River Drainage (except tributaries in Glacier National Park or in nationally designated Wild, Wilderness, or Primitive areas) except tributaries and lakes or reservoirs listed below:	B-D_1
Essex Creek Drainage to the Essex water supply intake	A-Closed
Remainder of Essex Creek Drainage	B-D_1
Snyder Creek (mainstem) through the community of Lake McDonald in Glacier National Park to Lake McDonald	B-D_1
Stillwater River (mainstem) from (but excluding) Logan Creek to the Flathead River	B-D_2

Whitefish Lake and its tributaries	A-Open-D_1
Whitefish River (mainstem) from the outlet of Whitefish Lake to the Stillwater River	B-D_2
Haskill Creek Drainage to the Whitefish water supply intake	A-Open-D_1
Remainder of Haskill Creek Drainage	B-D_1
Remainder of Whitefish River Drainage	B-D_1
Remainder of Stillwater River Drainage	B-D_1
Ashley Creek Drainage to and including Smith (Kila) Lake	B-D_1
Ashley Creek (mainstem) from Smith Lake to bridge crossing on the airport road about one mile south of Kalispell	B-D_2
Ashley Creek (mainstem) from bridge crossing on the airport road to the Flathead River	E
All tributaries to Ashley Creek from Smith Lake to the Flathead River	B-D_1
Flathead Lake and its tributaries except Flathead River above the Lake (as listed above) Swan River and a portion of Hellroaring Creek as listed below, but including Swan Lake proper and Lake Mary Ronan	A-Open-D_1
Swan River Drainage (except Swan Lake proper)	B-D_1
Hellroaring Creek Drainage to the Polson water supply intake	A-Closed
Remainder of Hellroaring Creek Drainage	B-D_1
(Simply as a note for clarification, the Flathead River below the highway bridge at Polson to Paradise is included in the "B-D_1" classification of the Flathead River Drainage listed above.)	
Crow Creek Drainage to road crossing at Section 16, T20N, R20W about two and a half miles southwest of Ronan, except the portion of Second Creek listed below:	B-D_1
Second Creek Drainage to the Ronan water supply intake	A-Closed
Remainder of Second Creek Drainage	B-D_1
Crow Creek (mainstem) from road crossing in S16, T20N, R20W to the Flathead River	B-D_2

Tributaries to Crow Creek from road crossing in S 16 to the Flathead River — B-D_1

Little Bitterroot River Drainage to Hubbart Reservoir — B-D_1

Little Bitterroot River (mainstem) from Hubbart Reservoir Dam to the Flathead River — B-D_2

Tributaries to the Little Bitterroot River from Hubbart Reservoir Dam to the Flathead River except Hot Springs Creek listed below: — B-D_1

Hot Springs Creek Drainage to the Hot Springs water supply intake — A-Closed

Hot Springs Creek (mainstem) from the Hot Springs water supply intake to the Little Bitterroot River — E

Tributaries to Hot Springs Creek (if any) from the Hot Springs water supply intake to the Little Bitterroot River — B-D_1

Mission Creek Drainage to the St. Ignatius water supply intake — A-Open-D_1

Mission Creek Drainage from the St. Ignatius water supply intake to U.S. Highway No. 93 crossing about one mile west of St. Ignatius — B-D_1

Mission Creek (mainstem) from U.S. Highway No. 93 crossing to the Flathead River — B-D_2

Tributaries to Mission Creek from the U.S. Highway No. 93 crossing to the Flathead R. — B-D_1

Kootenai River Drainage

Kootenai River Drainage from the border of Canada to the Idaho border (including the Yaak River), except the tributaries listed below: — B-D_1

Deep Creek Drainage (tributary to the Tobacco River) to the Fortine water supply intake — A-Open-D_1

Sullivan Creek Drainage to the Rexford water supply intake — A-Closed

Rainy Creek Drainage to the Zonolite Company water supply intake — A-Open-D_1

Rainy Creek (mainstem) from the Zonolite Company water supply intake to the Kootenai River	D_2
Flower Creek Drainage to the Libby water supply intake	A-Open-D_1

MISSOURI BASIN

Missouri River Drainage

Missouri River:

Missouri River Drainage to the Sun River in Great Falls except tributaries listed below:	$B\text{-}D_1$
East Gallatin River (mainstem) (tributary to the Gallatin River, tributary to the Missouri River) from Montana Highway No. 293 crossing about one-half mile north of Bozeman to, but excluding, Dry Creek about five miles east of Manhattan	$B\text{-}D_2$
Remainder of the East Gallatin River Drainage except the tributaries listed below:	$B\text{-}D_1$
Lyman and Sourdough (Bozeman) Creek Drainages to the Bozeman water supply intakes	A-Closed
Remainder of the Lyman and Sourdough Creek Drainages	$B\text{-}D_1$
Hyalite Creek Drainage to the Bozeman water supply intake	$A\text{-Open-}D_1$
Remainder of the Hyalite Creek Drainage	$B\text{-}D_1$
Big Hole River Drainage (tributary to the Jefferson, tributary to the Missouri River) above Divide	$A\text{-Open-}D_1$
Remainder of the Big Hole Drainage	$B\text{-}D_1$
Rattlesnake Creek Drainage (tributary to the Beaverhead River, tributary to the Jefferson River) to the Dillon water supply intake	$A\text{-Open-}D_1$
Remainder of the Rattlesnake Creek Drainage	$B\text{-}D_1$
Indian Creek Drainage (tributary to the Ruby River, tributary to the Beaverhead River) to the Sheridan water supply intake	$A\text{-Open-}D_1$
Remainder of the Indian Creek Drainage	$B\text{-}D_1$
Basin Creek Drainage (tributary to the Boulder River, tributary to the Jefferson River) to the Basin water supply intake	$A\text{-Open-}D_1$
Remainder of the Basin Creek Drainage	$B\text{-}D_1$
Prickley Pear Creek Drainage to the Montana Highway No. 433 crossing about one mile northwest of East Helena, except the tributaries listed below:	$B\text{-}D_1$

McClellan Creek Drainage to the East Helena water supply intake	A-Open-D_1
Remainder of the McClellan Creek Drainage	B-D_1
Prickley Pear Creek (mainstem) from the Montana Highway No. 433 crossing about one mile northwest of East Helena to its mouth	E
Tributaries of Prickley Pear Creek from the Montana Highway No. 433 crossing to its mouth except those listed below:	B-D_1
Ten Mile Creek Drainage to the Helena water supply intake	A-Open-D_1
Remainder of Ten Mile Creek Drainage	B-D_1
Willow Creek Drainage (tributary of the Smith River, tributary to the Missouri River) to the White Sulphur Springs water supply intake	A-Closed
Remainder of the Willow Creek Drainage	B-D_1
Missouri River (mainstem) from Sun River to Rainbow Dam	B-D_2
Missouri River Drainage from Rainbow Dam in Great Falls to the North Dakota line except the portion of the mainstem and the tributaries listed below:	B-D_3
Sun River Drainage to, but excluding, Muddy Creek near Vaughn	B-D_1
Muddy Creek Drainage	E
Sun River (mainstem) from Muddy Creek to the Missouri River	B-D_3
Tributaries (if any) to the Sun River from Muddy Creek to the Missouri River	B-D_1
Belt Creek Drainage to and including Otter Creek except portion of O'Brien Creek listed below:	B-D_1
O'Brien Creek Drainage to the Neihart water supply intake	A-Open-D_1
Remainder of the O'Brien Creek Drainage	B-D_1
Belt Creek (mainstem) from Otter Creek to the Missouri River	B-D_2
Tributaries to Belt Creek from Otter Creek to the Missouri River	B-D_1
Highwood and Shonkin Creek Drainages	B-D_1

Marias River Drainage except tributaries listed below:	B-D_2
Cutbank Creek Drainage to, but excluding, Old Maid Miller Coulee in Cutbank except the portion of Willow Creek listed below:	B-D_1
Willow Creek Drainage to the Montana Highway 464 crossing about one-half mile north of Browning	B-D_1
Willow Creek (mainstem) from the Montana Highway No. 464 crossing to Cutbank Creek (also included in the Marias River Drainage classification above)	B-D_2
Tributaries (if any) to Willow Creek from the Montana 464 crossing to Cutbank Creek	B-D_1
Cutbank Creek (mainstem) from Old Maid Miller Coulee to Birch Creek (also listed under Marias above)	B-D_2
Tributaries to Cutbank Creek from, but excluding Old Maid Miller Coulee (which is "B-D_2") to Birch Creek	B-D_1
Birch Creek Drainage except tributaries listed below:	B-D_2
Two Medicine Creek Drainage to and including the Badger Creek Drainage	B-D_1
Midvale Creek Drainage to the East Glacier water supply intake	A-Closed
Remainder of Midvale Creek Drainage	B-D_1
Summit Creek Drainage to the Summit water supply intake	A-Closed
Remainder of Summit Creek Drainage	B-D_1
Two Medicine Creek (mainstem) from Badger Creek to Birch Creek	B-D_2
Tributaries to Two Medicine Creek from Badger Creek to Cutbank Creek	B-D_1
Teton River Drainage to and including Deep Creek near Choteau	B-D_1
Remainder of Teton River Drainage	B-D_2
Eagle Creek Drainage to but excluding Dog Creek	B-D_1

Remainder of Eagle Creek Drainage B-D_3

Judith River Drainage to Big Spring Creek B-D_1

Big Spring Creek Drainage to the Mill Ditch Headgate near the southern city limits of Lewistown B-D_1

Big Spring Creek (mainstem) from the Mill Ditch Headgate to the Judith River B-D_2

Tributaries to Big Spring Creek from the Mill Ditch Headgate to the Judith River B-D_1

Judith River (mainstem) from Big Spring Creek to the Missouri River B-D_2

Tributaries to the Judith River from Big Spring Creek to the Missouri River B-D_1

Cow Creek Drainage to but excluding Al's Creek B-D_1

Remainder of Cow Creek Drainage B-D_3

Musselshell River Drainage to and including Hopley Creek near Harlowton B-D_1

Musselshell River Drainage from Hopley Creek to but excluding Half Breed Creek near Roundup except American Fork listed below: B-D_2

American Fork Drainage B-D_1

Musselshell River Drainage from and including Half Breed Creek to Fort Peck Reservoir except Flatwillow Creek Drainage listed below: B-D_3

Flatwillow Creek Drainage (may be the Box Elder Creek Drainage) near Mosby B-D_2

Missouri River (mainstem) from Fort Peck Dam to the Milk River B-D_2

Milk River Drainage from source (or from the Glacier National Park Boundary) to the International Boundary B-D_1

Milk River Drainage from the International Boundary to the Missouri River except the tributaries listed below: B-D_3

Big Sandy Creek Drainage above Big Sandy B-D_1

Remainder of Big Sandy Creek Drainage B-D_3

Beaver, Box Elder, and Clear Creek Drainages (all near Havre) B-D_1

People's Creek Drainage to and including the South Fork of People's Creek	B-D_1
Remainder of People's Creek Drainage	B-D_3
Wolf Creek Drainage near Wolf Point	B-D_2
Poplar River Drainage	B-D_2

Yellowstone River Drainage

Yellowstone River Drainage from the Yellowstone Park Boundary to the Laurel water supply intake	B-D_1
Yellowstone River Drainage from the Laurel water supply intake to the Billings water supply intake, except the tributaries listed below:	B-D_2
Clark's Fork River Drainage from source to the Wyoming line and from the Wyoming line to and including Jack Creek near Bridger	B-D_1
Clark's Fork River (mainstem) from Jack Creek to the Yellowstone River	B-D_2
Tributaries to the Clark's Fork River from Jack Creek to the Yellowstone River except the West Fork of Rock Creek listed below:	B-D_1
West Fork of Rock Creek Drainage to the Red Lodge water supply intake	A-Open-D_1
Remainder of West Fork of Rock Creek Drainage	B-D_1
Yellowstone River Drainage from the Billings water supply intake to the North Dakota line except the tributaries listed below:	B-D_3
Pryor Creek Drainage	B-D_1
Big Horn Drainage above but excluding William's Coulee near Hardin	B-D_1
Big Horn Drainage from and including William's Coulee to the Yellowstone River except the Little Big Horn listed below:	B-D_2
Little Big Horn Drainage above and including Lodgegrass Creek near Lodgegrass	B-D_1
Remainder of the Little Big Horn Drainage	B-D_2

Tongue River (mainstem) from Tongue River Reservoir to but excluding Prairie Dog Coulee	B-D_2
Remainder of the Tongue River Drainage	B-D_3
Fox Creek Drainage near Sidney	B-D_2

Little Missouri and Belle Fourche Drainages:

All waters	B-D_3

HUDSON BAY DRAINAGE

All waters within Glacier National Park except the portion of Swiftcurrent Creek listed below:	A-Open-D_1
Swiftcurrent Creek (mainstem) from the Many Glacier Chalet to Lake Sherbourne	B-D_1
All waters outside Park from Park Boundary to the International Boundary	B-D_1

MONTANA WATER POLLUTION CONTROL COUNCIL
and
MONTANA STATE DEPARTMENT OF HEALTH

April 14, 1970

WATER POLLUTION CONTROL IN MONTANA

I - Yellowstone River Drainage

Considerable progress has been made in control of water pollution from municipalities and industries in the Yellowstone River Drainage.

Notable accomplishments during the past two years have been:

1. Recently completed oil removal facilities at the Burlington Northern railroad shops at Livingston.

2. Facilities for removing sediment from the waste waters of the sugar beet refineries.

3. Additional waste water treatment by the oil refineries.

4. Connection of waste water lines from the two large meat packing plants to the City of Billings sewer and treatment system.

5. Completion of sewage lagoon systems by the Towns of Hysham and Broadview, City of Fairview, and Communities of Savage, Custer, Belfry, and Park City.

The following items are to be completed by industries and municipalities in the Drainage:

1. Secondary treatment of sugar beet refinery wastes by July 1, 1972.

2. Additional improvements by the Humble Oil Refinery at Billings to further reduce phenols and other organics by January 1, 1971.

3. Secondary treatment of sewage by Gardiner, Red Lodge, Joliet, and Billings before July 1, 1972 and by Livingston and Laurel by July 1, 1977. The City of Forsyth must construct an addition to their sewage lagoon system.

The major pollution problem at present arises from waste water flows from agricultural pursuits. An advisory committee has been appointed by the State Water Pollution Control Council to aid in formulating a plan for control of these wastes. The committee is comprised of people with a direct interest in agriculture.

It is planned that a study will soon be started on one of the smaller tributary drainages to the Yellowstone River to determine the sources of pollutants, means of correction, cost of correction, and to estimate the improvements that can be expected in water quality by the corrections. The proposed study will be in an area which is extensively irrigated and would serve as a pilot project for future

studies of this nature. Federal assistance will be sought for this study, as the State water pollution control budget is not adequately funded to provide staff for surveys which require considerable manpower.

Water pollution control work for the Yellowstone Drainage is handled from the Billings office of the State Department of Health. This office was established in 1962 for the primary purpose of working more closely on water pollution problems in the area. An engineer and a biologist-chemist are employed at Billings for work on the Yellowstone and lower Missouri River Drainages.

II - Missouri River Drainage (Except Yellowstone River Drainage)

Municipal and industrial water pollution problems are considered to be minimal at this time with localized effects in some areas.

Notable accomplishments during the past two years have been:

1. Start of construction of new Bozeman secondary treatment plant.

2. Completion of Vollmer Slaughterhouse waste treatment plant.

3. Completion of sewage lagoons for the City of Scobey, Towns of Ryegate, Winnett, and Lavina and the Community of Frazer.

4. Completion of the first phase of the secondary treatment system by Malmstrom Air Force Base.

5. Completion of an additional sewage lagoon cell by the City of Plentywood.

6. Completion of chlorination facilities by the City of Harlem and Town of Ekalaka.

7. Completion of secondary treatment facilities by the Montana Power Company at their Ennis and Hauser Dam generating stations.

8. Start of construction of secondary treatment facilities by Phillips Petroleum Company at Great Falls.

9. Start of construction of secondary sewage treatment and reduction of metals from The Anaconda Company at Great Falls.

The following items are to be completed by industries and municipalities in the Drainage:

1. Secondary treatment of wastes from the Glacier Mountain Cheese plant at Gallatin Gateway by July 1, 1972.

2. Secondary treatment of sewage by Virginia City, Helena, Great Falls, Vaughn, Havre, Hinsdale, Bainville, Medicine Lake and Wibaux by July 1, 1972 and Lewistown by July 1, 1977.

3. Sewage treatment improvements by Three Forks, Townsend, Dutton, and East Glacier by July 1, 1972.

In addition, waste treatment and water quality monitoring are needed to determine the adequacy of treatment by the smelters at East Helena, The Anaconda Company at Great Falls, and Sunburst Biochemicals at Conrad.

Like the Yellowstone Drainage, considerable work should be done in the area of agricultural pollution. Agriculture through soil conservation programs has done much to reduce pollution; however, there are areas of pollution from agricultural pursuits in the Missouri Drainage.

Recreational and other developments in the headwaters area will require considerable manpower in the future to insure that adequate sewage disposal facilities are constructed.

Water Pollution control activities for the upper Missouri River Drainage to the beginning of Ft. Peck Reservoir are handled through the State Department of Health office at Helena. Two sanitary engineers and a pollution control biologist are employed for this work and for supervising the activities handled through the Billings and Kalispell offices.

III - Columbia River Basin Drainage

Except for the upper headwaters of the Clark Fork Drainage, municipal and industrial water pollution problems are minimal in the Basin with localized effects in some areas.

Notable accomplishments during the past two years have been:

1. Completion of the Butte Metropolitan District sewage treatment plant.

2. Improved ponding system for The Anaconda Company wastes from the Butte-Anaconda area.

3. Improved oil removal facilities and sewage disposal facilities by the Milwaukee Railroad at Deer Lodge.

4. Improved solids removal facilities by Anaconda Forest Products at Bonner.

5. Construction of a new waste treatment lagoon by John R. Daily meat packing plant at Missoula.

6. Replacement of hydraulic debarker with mechanical debarker and dry handling of logs at Diamond-National Corporation mill near Superior.

7. Completion of new waste treatment facilities by Zonolite Division of W. R. Grace and Company mill near Libby.

8. Start of construction of new solids removal facilities by Hoerner-Waldorf Corporation near Missoula.

9. Start of construction of improved solids removal facilities by St. Regis Paper Company lumber mill at Libby.

10. Completion of secondary sewage treatment facilities by the Towns of Alberton, Superior, Rural Improvement District at Lolo, and Big Mountain Resort at Whitefish.

11. Improved sewage treatment facilities at the Anaconda Aluminum Company mill at Columbia Falls and the Lakeside Air Force Station.

12. Start of construction of secondary sewage treatment facilities by the City of Columbia Falls.

The following items are to be completed by industries and municipalities in the Basin:

1. Improved waste treatment by the Anaconda Company in the Butte-Anaconda area by July 1, 1972.

2. Secondary treatment of wastes from Consolidated Dairies at Ronan, Skyline Dairy at Kalispell, and Meadowland Dairy at Missoula by July 1, 1972.

3. Improved oil removal facilities at the Burlington Northern shops at Whitefish and Somers by July 1, 1970.

4. Secondary treatment by the Cities of Missoula, Hamilton, and Kalispell by July 1, 1972 and by the City of Libby by July 1, 1977. Chlorination of sewage by the State institution at Galen.

A detailed study of wastes from the Butte-Anaconda area is planned by the Federal Water Pollution Control Administration. This study was requested by the State Department of Health to determine the treatment needed by The Anaconda Company. Presently, the Clark Fork River below Warm Springs supports trout, but fish food is limited in the River from Warm Springs to Garrison.

In addition, waste treatment and water quality monitoring is required to determine the adequacy of treatment of wastes from Anaconda Forest Products at Bonner and Milwaukee Railroad at Deer Lodge. A study of the Hoerner-Waldorf mill wastes near Missoula is presently being made.

Recreational and other development in the Basin requires considerable manpower from the State Department of Health water pollution control staff and will require additional manpower in the future. Logging practices should be reviewed to determine their adequacy for preventing water pollution.

Water pollution control work for the Kootenai, Flathead and Lower Clark Fork River Drainages is handled from the State Department of Health office in Kalispell where a public health engineer is stationed. This office was established during 1969. The Upper Clark Fork River Drainage to Alberton is handled from the Helena office.

MONTANA STATE DEPARTMENT OF HEALTH
Division of Environmental Sanitation

MONTANA WATER POLLUTION CONTROL LAW

69-4801. Public policy of the state.

(1) It is the public policy of this state to:

(a) conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses;

(b) provide a comprehensive program for the prevention, abatement, and control of water pollution.

(2) It is not necessary that wastes be treated to a purer condition than the natural condition of the receiving stream. However, municipal or industrial pollution upstream shall not be considered natural.

69-4802. Definitions. As used in this chapter, unless the context clearly indicates otherwise:

(1) "Sewage" means water-carried waste products from residences, public buildings, institutions, or other buildings including discharge from human beings or animals together with ground water infiltration and surface water present.

(2) "Industrial waste" means any waste substance from the process of business or industry, or from the development of any natural resource together with any sewage that may be present;

(3) "Other wastes" means garbage, municipal refuse, decayed wood, sawdust, shavings, bark, lime, sand, ashes, offal, night soil, oil, tar, chemicals, and all other substances that may pollute state waters;

(4) "Contamination" means impairment of the quality of state waters by sewage, industrial wastes or other wastes creating a hazard to human health;

(5) "Pollution" means the alteration of any of the properties of state waters which is detrimental to their most beneficial use;

(6) "Sewerage system" means any device for collecting or conducting sewage, industrial wastes or other wastes to an ultimate disposal point;

(7) "Treatment works" means any works installed for treating or holding sewage, industrial wastes or other wastes;

(8) "Disposal system" means a system for disposing of sewage, industrial, or other wastes and includes sewerage systems and treatment works;

(9) "State waters" means any body of water, irrigation system, or drainage system either surface or underground;

(10) "Person" means the state, any political subdivision of the state, institution, firm, corporation, partnership, or individual or other entity;

(11) "Council" means the state water pollution control council.

69-4803. Classification of waters for industrial use. Waters shall be classified only for industrial use if primarily and continuously devoted to industrial waste use except for seasonable variations for a period of over thirty (30) years, and not used for human consumption in a single public supply system serving more than one hundred (100) persons.

69-4804. Chapter inapplicable to drainage or seepage from artificial bodies of water privately owned--exception. This chapter does not apply to drainage or seepage from artificial, privately owned bodies of water unless drainage reaches flowing waters in a condition which would pollute the flowing waters.

69-4805. Administration of chapter--responsibility of state board of health. Under council supervision, the state board of health has responsibility for administration of the provisions of this chapter. The state board may use personnel of the state department of health as necessary to administer the provisions of this chapter.

69-4806. Pollution unlawful--permits. It is unlawful to:

(1) cause pollution as defined in section 122 (5) [69-4802 (5)] of this act to any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;

(2) carry on any of the following activities without a current permit from the department:

(a) operate a disposal system which discharges to the state waters;

(b) construct or modify a disposal system which discharges to the state waters;

(c) increase the volume or strength of sewage, industrial wastes, or other wastes in excess of the permissive discharges specified under any existing permit;

(d) construct or use any new outlet for the discharge of sewage, industrial wastes, or other wastes to the state waters.

69-4807. Permits, issuance--plans and specifications required--treatment works required for new or increased sources of sewage, industrial waste, or other waste--revocation of permit for violation. The department may require plans and specifications to determine if a permit should be issued. Any person introducing a new source or increased source of sewage, industrial waste, or other

wastes as defined in section 69-4802 (1), (2) and (3), R.C.M. 1947 to waters and tributaries of waters classified as A-open-D-1 or higher by the council shall be required to install and maintain the highest and best degree of treatment works necessary to maintain adequately said classification, as defined in section 69-4802 (7), R.C.M. 1947 prior to the issuance of a permit by the department. If a violation of a permit causes damage to a water use, the department may immediately order revocation of the permit without a hearing, and so notify the violating person in writing, by registered mail, return receipt requested, the revocation to be effective immediately upon receipt of such notice by such person.

69-4808. Duties of the state board of health.

(1) The state board shall advise, consult, and cooperate with other states, other state agencies and agencies of the federal government, affected groups, political subdivisions and industries, in the formation of a comprehensive plan to control water pollution.

(2) The state board may:

(a) accept loans and grants from the federal government and from other sources to carry out the provisions of this chapter;

(b) modify council actions, but only as necessary to protect human health;

(c) through its authorized representatives, enter upon any private or public property at reasonable times to investigate conditions relating to pollution of state waters;

(d) issue, modify, or revoke orders for the abatement of pollution;

(e) issue, revoke, modify, or deny permits to persons for the collection and discharge of sewage and wastes under conditions prescribed by the state board and the council.

69-4808 1. State board of health to administer state matching funds for construction of water pollution control facilities--limit on funds. The state board of health of the state of Montana hereinafter referred to as the state board of health, is hereby designated as the state agency which shall administer and control all funds to be appropriated by the state for the purpose of providing matching funds to local governments for the construction of water pollution control facilities. The state board of health shall promulgate rules and regulations, and establish standards for the use of such matching funds, by local governments, in the planning and construction of local water pollution control facilities.

Any funds appropriated by this act shall be used only to provide an increase in the aid from the federal government not otherwise obtainable and in no case shall exceed twenty-five per cent (25%) of the total cost of the project as participated in by the federal water pollution control administration.

69-4809. Powers and duties of the state department of health. The department shall:

(1) examine and approve or disapprove plans and other information needed to issue a permit;

(2) collect and furnish information relating to the prevention and control of water pollution;

(3) conduct necessary research and demonstrations concerning water pollution.

69-4810. State water pollution control council--creation--members, appointment and term of office. There is a state water pollution control council whose members are:

(1) the executive officer of the state department of health;

(2) the state fish and game director;

(3) the director of the water conservation board;

(4) four (4) members appointed by the governor for terms of four (4) years as follows:

(a) a representative of industry concerned with the disposal of inorganic waste;

(b) a representative of industry concerned with the disposal of organic waste;

(c) a representative of agriculture;

(d) a representative of municipal government.

69-4811. State water pollution control council--vacancy in office, filling--compensation of members. Terms of council members holding office on the effective date of this act shall not be affected. An appointment to an expired term shall be for four (4) years. An appointment to an unexpired term shall be for the remainder of the term. The four (4) appointed members shall receive twenty dollars ($20) per day plus actual and necessary expenses incurred in performing their duties. Expenses shall be paid by the department of health from funds appropriated and allocated to water pollution control.

69-4812. State water pollution control council--officers--meetings--quorum--designating of deputy by member.

(1) The council shall select a chairman from among its members. The executive officer shall designate a member of the public health engineering staff of the department to act as secretary to the council. The secretary shall keep records of all actions taken by the council.

(2) It shall hold at least two (2) regular meetings each calendar year. Special meetings shall be held at the call of the chairman or upon written request of two (2) or more members. A majority of the members is a quorum.

(3) Each member may, by filing with the secretary, designate a deputy or alternate to perform his duties.

69-4813. Powers and duties of the council. The council shall:

(1) establish and modify the classification of all waters in accordance with their present and future most beneficial uses;

(2) investigate means of eliminating materials which pollute state waters, and prevent pollution that is detrimental to the public health, recreation, agriculture, industry, animals, fish or aquatic life;

(3) adopt rules to guide the state board and department in the administration of this act;

(4) adopt a comprehensive program for prevention of pollution of waters;

(5) recommend and encourage research and demonstrations relating to water pollution;

(6) direct the state board and department regarding any action necessary as a result of research or demonstrations;

(7) formulate standards of water purity and classification of water according to its most beneficial use giving consideration to the economics of waste treatment and prevention;

(8) hold any hearings necessary for the proper administration of this act, receive complaints, and make investigations;

(9) utilize staff services of the state board and department as they are able to furnish within budgetary limits;

(10) exercise all incidental powers necessary to carry out the provisions of this chapter

69-4814. Hearings by council--notice. Before streams are classified, or standards established or modified, the council shall hold a public hearing. Notice of the hearing specifying the waters concerned and the classification, standards or modification of them shall be published at least once a week for three (3) consecutive weeks in a newspaper of general circulation in the area affected. Notice shall also be mailed directly to persons the council believes may be affected by the classification or standard.

69-4815. Rehearing of order--procedure. Any order of the council or state board is final thirty (30) days after notice is given to the person affected unless a rehearing is held before that time. The procedure for a rehearing is:

(1) the person affected by the order shall request a rehearing before the council;

(2) before the thirty-first (31st) day after receipt of the request, the council shall hold a rehearing;

(3) a record or summary of the rehearing shall be filed with the council together with its findings of fact;

(4) a representative of the council may administer oaths, examine witnesses, and issue notices of the rehearing including subpoenas requiring the testimony of witnesses and the production of evidence;

(5) witnesses shall receive the same fees and mileage as in other civil actions;

(6) in case of failure to obey a notice of hearing or subpoena, the district court where the hearing is held has jurisdiction upon request by the council to issue an order requiring a person to appear and testify or produce evidence, and failure to obey shall be punished as contempt of district court;

(7) the council shall affirm, modify, or reverse the order of the council or the board and notify the person of its action;

(8) the order of the council or the state board is final thirty (30) days after notice of final action is served on the person by registered mail unless the person has appealed to the district court.

69-4816. Appeal from decision at a rehearing--procedure. The procedure for appealing the decision of the council at a rehearing is:

(1) within thirty (30) days after receipt of a copy of the council's decision, a person shall serve notice of appeal on the council through its secretary;

(2) for good cause, the court may extend the time for notice of appeal but not to exceed an additional sixty (60) days;

(3) the notice of appeal shall refer to the action and specify the ground of appeal;

(4) the notice of appeal with proof of service shall be filed with the clerk of the court before the eleventh day after service of the notice;

(5) any person affected may become a party by intervention as in a civil action upon showing cause;

(6) the attorney general shall represent the council if requested, or the council may appoint special counsel for the proceedings;

(7) no bond or deposit for cost is required of the state or council upon the appeal to the district court or any subsequent appeal;

(8) the trial shall be de novo;

(9) the court shall determine whether or not the council regularly pursued its authority, or whether the orders of the board and the findings of the council are sustained; and whether the orders and findings are reasonable under the circumstances of the case;

(10) an appeal from the decision of the district court may be made to the supreme court in the same manner provided in other civil cases;

(11) upon final determination, the council shall enter an order in accordance with the determination made by the court.

69-4817. Compliance with order required--extension of time. Before the thirty-first (31st) day after an order of the state board or the council becomes final, or a court judgment affirming or reversing the order is entered, the person upon whom the order was served shall initiate steps to comply with the order. On good cause shown, the state board or council may extend the period for compliance for a reasonable time.

69-4818. Injunction to enforce order. The council shall bring action for an injunction against any person who fails to comply with a final order of the state board or council.

69-4819. State officers to cooperate with state water pollution control council. The council may require the assistance, cooperation, services, and use of records of all state agencies. State officers and employees shall cooperate with the council in furthering the purposes of this chapter.

1/70/500

REGULATION No. 52.2-40

MONTANA STATE BOARD OF HEALTH

Pertaining to the administration and enforcement of "THE DREDGE MINING REGULATION AND LAND PRESERVATION ACT," being Chapter 123 of the Session Laws of Montana, 1969.

I. AUTHORITY. These regulations are adopted and promulgated pursuant to the authority contained in Section 4 of said "THE DREDGE MINING REGULATION AND LAND PRESERVATION ACT," said Section 4 reading as follows:

> "Section 4. (a) The state board of health is hereby designated the administrative agency of this act and shall have the power and duty to adopt rules and regulations for its administration in accordance with the intent and purposes thereof, and to employ personnel necessary to act upon its behalf and to carry out this law effectively.***
>
> "(c) The board may establish such rules and regulations as it deems necessary to define the terms and carry out the purposes of this act."

II. POLICY OF THE ACT AND THESE REGULATIONS.

A. It is hereby declared to be the policy of the state of Montana to protect its lands, streams and water courses from destruction by dredge mining and preserve the same for the enjoyment, use and benefit of all of the people, and that clear and unpolluted water in the streams, rivers and lakes of Montana suitable for recreation, domestic, industrial, commercial and agricultural purposes is in the public interest.

III. DEFINITION OF "DREDGE MINING."

A. "Dredge mining" means mechanical operations that result in the recovery of minerals in or near a stream or riverbed, with the use of a dredge boat or sluice washing plant, whether fed by bucket line as part of such dredge or by separate dragline, hydraulic pressure, vacuum, suction or any other supply capable of moving ten (10) cubic yards or more of earth or rock material per day.

IV. OPERATIONS EXCLUDED.

A. These regulations do not apply to any mechanical operation primarily intended for open pit mining, strip coal mining, irrigation, extraction of gravel for construction and/or road building purposes, or agricultural purposes.

V. TERRITORIAL APPLICATION OF REGULATIONS.

A. These regulations shall be applicable to dredge mining operations upon all property located within the State of Montana, whether publicly or privately owned.

VI. APPLICATION AND PERMIT.

A. No company, corporation, partnership, firm or individual shall conduct dredge mining operations within the State of Montana without making application for and obtaining a permit as in these regulations provided.

B. Before any entity or person may conduct a dredge mining operation within the State of Montana, it or he shall file with the Montana State Board of Health an application for a permit upon a form provided by said board.

C. The application shall be accompanied by an application fee of One Hundred Dollars ($100.00) for each ten (10) acres of land or fraction thereof involved in such application.

D. The land description contained on said application shall be accurate and shall describe the land proposed to be dredged by legal subdivisions and shall specify the number of acres involved.

E. As indicated on said application form, the application shall be accompanied by such sketches, plans and contour maps of the area to be dredged as will adequately describe how the proposed mining operations and any construction will satisfy the provisions of Sections 8 and 9 of said act, which said sections read as follows:

> "Section 8. Where any person conducts a dredge mining operation within the state, it is hereby required that the ground disturbed thereby shall be by such operator smoothed over reasonably comparable with the natural contour of the ground prior to such disturbance. Any watercourse disturbed by such dredging shall be by such operator replaced on meander lines with pool and stream structure conducive to good fish and wildlife habitat and recreational use. The disturbed area shall be replanted as far as reasonably possible to the condition existing prior to dredging.
>
> "Section 9. Where any person conducts a dredge mining operation where water used in such mining process flows into a stream or river within the state, it is hereby required that such operator shall construct settling ponds of sufficient capacity and character to clarify the water used in the mining process before such water is discharged into the stream. Such settling ponds shall be constructed in such a manner as to prevent sedimentary overflow or other pollution during high water."

The said sketches, plans and contour maps shall contain thereon such explanatory text as might be necessary to explain fully and clearly what is proposed to be done with regard to satisfying the provisions of said Sections 8 and 9.

F. If any entity or person other than the applicant is the owner of the lands described in the application or of any part thereof or interest therein, then such owner who is not the applicant shall endorse the approval of such owner upon the application form itself, and also upon each sheet of all material attached to such application form. For the purposes hereof an owner who is not the applicant includes a lessor, the owner of a contingent or remainder interest in the property, a surface owner, and the owner of any other right or interest or ownership of whatsoever kind in or to the real property proposed to be dredged, or any part thereof. No permit shall be issued in the absence of strict compliance herewith.

G. Within ten (10) days after the filing with the board of health of an application for a permit, as specified in these regulations, the Director (meaning the director of the Division of Environmental Sanitation of the Montana State Department of Health) on behalf of said board shall issue a notice specifying the date of filing, the lands and waters affected, the name and address of the applicant, and stating that anyone desiring to protest the issuance of the permit applied for may file a written protest within forty (40) days after the date of first publication of such notice. Said Director shall cause said notice to be published within ten (10) days after the date same is filed, in a newspaper published within the county where the dredging operation is proposed, or in the event no newspaper is printed in that county, then in a newspaper of general circulation therein. Said notice shall be published once a week for three (3) consecutive weeks. Any person, association, corporation or agency of Montana or the United States Government may, within the time allowed, to-wit, forty (40) days, file with said Board a written protest against the granting of such application. The protest shall be signed by the protestant and shall contain the address of protestant, and shall clearly set forth the protestant's objections to the approval of the application in question.

H. Said Board or its personnel or authorized agents may conduct such investigations as the Board deems desirable for the purpose of determining whether the permit should be approved. In determining whether an application for permit shall be approved or disapproved, said Board shall consider these regulations, any other rules and regulations of the Board pertinent to the application and the subject matter thereof, the provisions of the said legislative act and any other applicable laws, federal, state or local.

I. No application shall be approved by the Board unless the Board, on the basis of the application and attachments thereto, and on the basis of any investigation which it may conduct, and on the basis of any other information or matters which it is entitled to consider, specifically finds that:

(1) granting of the application will not be detrimental to the present and future economy of the area or the state, and

(2) grant of the application will not have an adverse effect upon the natural habitat and the environment of fish and game or other wildlife of the area or the state, and

(3) granting of the application will not be detrimental to or cause undue damage to the natural resources of the area or the state, and

(4) granting of the application will not have an adverse effect upon present and future tourists and recreational value of the area or the state, and

(5) granting of the application will not have an adverse effect upon the future assessed value of the area or the state, and

(6) granting of the application is in the public interest.

J. After the application and attachments thereto have been received by the Board in due form and substance, and after the expiration of the time allowed for filing of protests, and after the completion of any investigation which it may make pursuant to these regulations, and after due consideration of all material and pertinent information in its possession, the Board shall make an initial determination, which shall be a determination to approve or to disapprove the application. Upon the making of such initial determination, the Board shall notify the applicant and all protestants by mailing a written notice of its intended action of approval or disapproval to the addresses appearing on the application and the protests, if any. If the applicant or any protestant desires a hearing upon the subject matter of the application, such protestant shall file a written request for such hearing with said Board within thirty (30) days from and after the mailing of the last-mentioned notice. If no request for hearing is received by the Board, the initial determination of the Board shall become final and nonreviewable. If such hearing be so requested, the application in question shall be deemed a contested case, and a hearing conducted pursuant to the following procedure:

(a) Within ten (10) days from and after the expiration of the period of thirty (30) days allowed for requesting hearing, the Board shall mail written notice of the time and place of the hearing to the applicant and to all protestants. The hearing may be held at any place within the State of Montana, and must be held within seventy (70) days from and after the mailing of said notice of hearing. If such notice of hearing is mailed successively to different parties, said seventy (70) day period shall run from the date of the last mailing.

(b) The Board may appoint any competent person as a hearing officer to conduct the hearing. The hearing may be held before the hearing officer alone or before the hearing officer with the Board present, or before the Board itself, with any member of the Board acting as hearing officer, in the discretion of the Board

(c) The hearing shall be conducted under the rules of evidence ordinarily employed in administrative hearings before the Board, which are informal rules, rather than strict rules of evidence. The object of such hearing shall be to afford the interested parties due process, and any procedure which accomplishes this shall be deemed sufficient for the purposes of such hearing.

K. Upon the expiration of the time for filing of protests to the initial determination of the Board, without any such protests being filed, or upon the filing of protests and the expiration of the time allowed for requesting hearing, without any such request for hearing being made, or upon the conclusion and final adjournment of any hearing pursuant to request, the Board shall within seventy (70) days thereafter, make its final determination to approve or disapprove the application, and shall within said period of time make appropriate findings and such determination in writing, and mail a copy of such findings and determination to the applicant and all protestants. Such final determination of the Board shall be nonreviewable.

L. No permit shall be finally granted except upon written approval by a two-thirds (2/3) majority of the membership of said Board.

M. No permit shall be issued to any applicant to conduct dredge mining operations, until such applicant shall file with the Board an initial surety bond in the sum of ten thousand dollars ($10,000.00) for a specified and particularly-described ten (10) acre tract of the area covered by the permit or for all of the land covered by the permit if the permit covers an area less than ten (10) acres, with sureties acceptable to said Board, conditioned for the faithful performance by the applicant of all of the requirements of said legislative act, relative to land and water course restoration. Prior to conducting dredge mining operations on any of the permit area not covered by the initial bond, the person to whom the permit has been issued shall file with the Board a similar bond in the sum of ten thousand dollars ($10,000.00) for each specified and particularly-described ten (10) acre tract of the permit area or for the remaining area covered by the permit where less than ten (10) acres remain in the permit area. In lieu of such surety bond cash may be deposited with the said Board in the sum computed in the same manner as hereinabove set forth, to be retained as security for the faithful performance by the applicant of the requirements of said legislative act, to-wit, "THE DREDGE MINING REGULATION AND

LAND PRESERVATION ACT," Chapter 123 Montana Session Laws of 1969. No dredge mining operations of whatsoever kind or character shall be commenced or conducted until this regulation has been fully and strictly complied with.

N. The permit shall describe the land and the exact acreage involved, and may in the discretion of the Board be limited to a lesser area than sought in the application.

O. All permits shall be absolutely non-transferrable, and no permittee shall transfer or attempt to transfer such permit to anyone.

P. Said Board in its administration of said legislative act shall cause periodic inspections to be made of all dredge mining operations in Montana which are conducted under permit from said Board, for the purpose of determining whether each dredge mining operator is strictly complying with these regulations and said legislative act, and the following shall be rules and regulations governing such inspections:

(a) Any personnel, agent or authorized representative of said Board shall have full access to the mining premises and all equipment and business properties thereon, for the purpose of making complete and thorough inspection of the entire mining operation and everything connected therewith.

(b) Any permittee who or which personally or through any agent, employee or representative shall refuse admittance to any personnel, agent or representative of said Board who shall request such admission, shall have the permit covering the premises involved immediately and automatically revoked without further action by the Board. In other words, complete cooperation in the matter of inspections, and complete disclosure, is required of the permittee, with regard to such inspections.

Q. If upon inspection it appears to the Director of the Division of Environmental Sanitation of the Montana State Department of Health that a permittee is not in strict compliance with these regulations and all of the provisions of said legislative act, said Director shall immediately revoke the permit, and shall notify the permittee of such revocation, in writing, whereupon no further operations shall be conducted upon the lands which are the subject of the permit, except that all provisions of said legislative act with regard to restoration of the premises shall be fully complied with, the bonds specified in the said legislative act and these regulations to remain in full force and effect.

R. The surety bonds required by these regulations and said legislative act shall remain in full force and effect at all times, until the permittee shall furnish proof satisfactory to said division of

environmental sanitation that the dredge mining operation has been completed and that the permittee has fully complied with all of the requirements of these regulations and said legislative act, whereupon the Director of said Division of Environmental Sanitation shall certify in the records of said department that said operation has been completed and such compliance had and done, whereby said bonds shall be exonerated.

S. Surety bonds provided for in said legislative act shall be forfeited under the conditions specified in said legislative act, and there is hereby created a special fund to be administered by said Board in the restoration of the lands and beds of streams damaged by dredge mining of defaulting permittees, such restoration operations to be conducted under the direction of the Director of said Division of Environmental Sanitation, in accordance with standards to be adopted by said Division and approved by said Board. Such standards shall be in general conformity with the restoration plan submitted by the applicant with the application.

T. No forfeiture of bond shall be made until after a hearing noticed to the permit holder and the surety or sureties on the bond as provided in paragraph J of this regulation, such hearing to be held also in accordance with the provision governing hearings under said paragraph J.

U. Section 13(c) of said legislative act provides for the filing with said Board of applications protesting the violation of said act, and it is hereby provided that upon the filing of any such application, the said Division of Environmental Sanitation shall make such investigation through its personnel and representatives as the Director thereof shall deem appropriate.

MONTANA STATE DEPARTMENT OF HEALTH
Division of Environmental Sanitation

MONTANA'S LAWS REGARDING SUBDIVISIONS

Title 69, Section 5001, R.C.M. Public Policy of the State. It is the public policy of this state to extend present laws controlling water supply and sewage disposal to include individual wells affected by adjoining sewage disposal and individual sewage systems

Title 69, Section 5002, R.C.M "Subdivision" Defined. As used in this chapter, unless the context clearly indicates otherwise, "subdivision" means any tract of land which is divided into two (2) or more parcels, any parcel of which is less than five (5) acres in size along an existing or proposed street, highway, easement, or right-of-way for sale, rent, or lease as residential, industrial, or commercial building lots described by reference to a map or survey of the property.

Title 69, Section 5003, R.C.M. Filing of Map or Plat Subject to Sanitary Restrictions--Submission to and Approval by State Department of Health--Removal or Modification of Restrictions. Any subdivision map or plat filed with the county clerk and recorder shall be subject to a sanitary restriction which must be recorded on, or attached to, the map or plat by the county clerk and recorder. No building or shelter which necessitates supplying water or sewage or waste disposal facilities for persons shall be erected until the sanitary restriction has been removed or modified. Before any restriction can be removed or modified by the county clerk and recorder, the map or plat of the subdivision must be submitted to the state department of health for their approval. Conditional approval may be given by the department after construction of a part of the water and sewage system, but permanent buildings shall not be occupied until the restriction has been removed or modified. The county clerk and recorder shall remove the sanitary restriction upon notice from the department that:

(1) the department approves plans and specifications for the public water facility and sewage facilities; or

(2) the subdivision map or plat is approved by the department for a subdivision not providing public water or sewage systems

Title 69, Section 5004, R.C.M. Filing or Recording of Noncomplying Map or Plat Prohibited. The county clerk and recorder shall not file or record any map or plat showing a subdivision unless it complies with the provisions of this chapter.

Title 69, Section 5005, R.C.M. Rules for Administration and Enforcement of Chapter. The state board shall make rules, including adoption of sanitary standards, necessary for administration and enforcement of this chapter. The rules and standards shall provide the basis for approving subdivision maps or plats for various types of water and sewage facilities, both public and private, and shall be related to size of lots, contour of land, porosity of soil, ground water level, type and construction of private water and sewage facilities, and other factors affecting public health

MONTANA STATE DEPARTMENT OF HEALTH
Division of Environmental Sanitation

Regulation 51.1-136

APPROVAL OF WATER AND SEWER FACILITIES IN SUBDIVISIONS

Statutory Authority 69-5005
Adopted 5/27/61. Revised 9/21/63.

Section I. Definitions.

"Approved Potable Water Supply" means any water supply which has been approved by the State Board of Health.

"Approved Sewer System" means a sanitary sewer system which has been approved by the State Board of Health and serves or is intended to serve two or more dwellings in a subdivision.

"Approved Public Water Supply System" means any installation or structure designed to provide domestic or potable water supply and which has been approved by the State Board of Health and serves or is intended to serve two or more dwellings in a subdivision.

"Sewerage Facilities" means any installation or structure designed to provide for the collection and disposal of sewage.

"Water Facilities" means any installation or structure designed to provide an approved potable water supply.

"Board of Health" means the State Board of Health of the State of Montana.

"Plat" means a plan, map, or chart, especially of a town site.

"Well" means an artificial excavation that derives water from the interstices of the rocks or soils which it penetrates.

"Septic Tank" means a single-story settling tank in which the settled sludge is in immediate contact with the sewage flowing through the tank, while the organic solids are decomposed by anaerobic bacterial action.

"Subsurface Drainfield" means the process of sewage treatment in which the septic tank effluent is applied to land by distribution beneath the surface through open-jointed pipes or drains.

"Subdivision" as defined by Section 69-5002: The word "Subdivision" as used in this act shall mean any tract of land which is hereafter divided into two or more parcels, any parcel of which is less than five acres in size, along an existing or proposed street, highway, easement or right-of-way for sale, rent or lease, as residential lots or residential or industrial or commercial building plots which are described by reference to a map or survey of the property or by any other method of description.

Section II. Procedure for Submitting Plats for Water and Sewer for Subdivisions.

A. Submit plat and completed copy of E.S. 91.

1. If public water and sewer system, so indicate, and submit plans for approval as required by Section 69-4905 (4), R.C.M., 1947. Obtain Board of Health approval.

a. Water and sewer installed--plat approved.

b. If water and sewer not installed but plans approved, may file plat with county clerk and recorder with "Sanitary Restriction", and furnish Board of Health with a statement that no structures will be erected until the water and sewer are under construction.

c. With approved plat--can build houses.

2. If individual water and/or sewer facilities or such individual facility coupled with public water or sewer system:

a. Submit information requested in regulations.

b. Show minimum size lot.

c. Indicate location of seepage tests for soil porosity.

d. Submit necessary information concerning ground water.

e. If subdivider is building houses--

(1) Submit typical water and sewer facility plan.

f. If subdivider is selling lots for building--

(1) Submit statement that will be inserted in deed or contract requiring proper location of water and sewer system.

(2) Purchaser or subdivider submit individual water and sewer facility plan.

g. Plat will then be approved upon receipt of proper information.

Section III. General

A. A plat together with the necessary information must be filed with the State Board of Health for approval of the water and sewage facilities in any subdivision proposed in Montana as defined above.

B.

1. Plats are to be filed with the State Board of Health as required under Section 69-5003 as amended, which is quoted herewith:

"Title 69, Section 5003, R.C.M. Filing of Map or Plat Subject to Sanitary Restrictions--Submission to and Approval by State Department of Health--Removal or Modification of Restrictions. Any subdivision map or plat

filed with the county clerk and recorder shall be subject to a sanitary restriction which must be recorded on, or attached to, the map or plat by the county clerk and recorder. No building or shelter which necessitates supplying water or sewage or waste disposal facilities for persons shall be erected until the sanitary restriction has been removed or modified. Before any restriction can be removed or modified by the county clerk and recoder, the map or plat of the subdivision must be submitted to the state department of health for their approval. Conditional approval may be given by the department after construction of a part of the water and sewage system, but permanent buildings shall not be occupied until the restriction has been removed or modified. The county clerk and recorder shall remove the sanitary restriction upon notice from the department that:

(1) the department approves plans and specifications for the public water facility and sewage facilities; or

(2) the subdivision map or plat is approved by the department for a subdivision not providing public water or sewage systems."

2. With the plat it will be necessary to submit plans for the type of water and sewer system proposed. If a public water supply and sewer system is to be installed, the data submitted would so indicate. Plans for these facilities will be submitted to the State Board of Health under present laws covering public water and sewer systems. These are set forth under Title 69, Section 4905 (4). When the water and sewers have been installed as approved, the plat would then be approved.

3. If the plans were approved but if the water and sewer lines were not installed, the conditional restrictions would remain until the water and sewer lines were installed. Until the conditional restriction was removed, permanent buildings as set forth above could be erected but not occupied.

4. When service from an acceptable public or community water or sewer system is not available or feasible, an individual water supply and sewage disposal system may be considered acceptable providing it is installed in accordance with the standards set forth in these regulations. If the subdivider does not construct the dwellings, then he shall include in the deed a restrictive clause setting forth the procedures that shall be followed in the construction of the individual water and sewer facilities.

C. A plat may be filed with the county clerk and recorder when it has the approval of the State Board of Health. Such plat is filed without any sanitary restrictions. If the State Board of Health approval has not been obtained, it will be necessary that the county clerk and recorder place a restriction on the plat which will prohibit the construction of any buildings as set forth above in Section B until such "sanitary restriction" has been removed or modified by State Board of Health approval. The county clerk and recorder's responsibilities are set forth in Section 69-5003 of the law.

"Section 3. All such subdivision maps or plats or revisions thereof shall be subject to the filing and sanitary requirements provided in this act and its rules and regulations and no county clerk and recorder shall file nor record

nor accept for filing or recording any map or plat showing such subdivision of land in any city, town or county unless it complies with the provisions of this act, except as provided in Section 69-5003 of this act."

"Section 4a. Any such subdivision map or plat or revision thereof filed or recorded by the county clerk and recorder in accordance with other provisions of law may be so filed or recorded without regard to the sanitary requirements provided for in this act and its rules and regulations; provided, however, that any such map or plat to be so filed or recorded shall first be subject to a sanitary restriction which must be recorded on or attached to the map or plat by the county clerk and recorder; and no building or shelter, the use of which by persons necessitates supplying water, sewage or waste disposal, shall be erected until such restriction has been removed or modified as provided hereafter."

D. County clerk and recorder may file or record or accept for filing or recording any map or plat showing such subdivision of land in any city, town or county even though the State Board of Health approval has not been first obtained for the water and/or sewage disposal systems. When such is the case a "sanitary restriction" shall be recorded on or attached to the map or plat by the county clerk and recoder. The subdivider shall be so informed at the time of filing that the "sanitary restriction" has been placed on the subdivision and that no dwellings, shelters or buildings requiring water or sewage facilities shall be constructed until such sanitary restriction shall be removed or modified as set forth in these regulations.

E. The subdivider should he sell any lot, lots or plots of ground within the subdivision while the sanitary restriction is still in force shall so indicate on the deed or other documents of sale, the restriction that no dwelling, shelter or building requiring water or sewage facilities shall be erected on the property until the sanitary restriction has been removed or modified in accordance with these regulations.

F. The sanitary restriction shall be removed or modified when all of the following conditions are fulfilled.

1. The subdivider, owner or other authorized person shall submit to the State Board of Health for review a plat or plan of the subdivision containing all of the information as set forth in these regulations.
2. The State Board of Health after review of the plat and accompanying information finds all of the requirements as set forth in these regulations and Section 69-5001 to 69-5005 as amended have been complied with.
3. A letter to be attached to the plat of the subdivision or an endorsement thereon from the State Board of Health approving the methods proposed or systems constructed for water supply and/or sewage disposal facilities is received and properly attached by the county clerk and recorder.

Section IV. Submission of Plans

A. A plan suitable for filing (with scale no smaller than one inch equals one hundred feet) to become a part of the permanent record of the State Board of Health shall be submitted to the Board for its review and approval. The plan shall indicate the size of lots, the topography, the proposed location for the water and sewage facilities, soil conditions, soil tests, and de-

tailed information for all wells and septic tanks. If additional copies of the map are to be approved for filing with the county clerk and recorder or if the owner desires to have copies, these additional copies shall be submitted at the time that the plans are reviewed. Criteria covering the requirements for satisfactory water supply systems and sewage disposal systems are included in Sections IV through IX of these regulations.

B. Percolation Tests for Subdivisions.

1. An adequate number of tests shall be made (one per acre, or if soil conditions indicate, a greater number will be required) to show clearly the absorptive ability of the soil throughout the tract.

2. Each test hole shall be located by a key number on a topographic map of the tract.

3. Soil borings shall be made (one every five acres, or if sub-soil conditions indicate a greater number will be required) to show clearly the type of soil existing beneath the absorption area. Borings should extend to a point at least six feet below the finish grade of proposed absorption trenches.

4. Individual lots. One percolation test shall be made (or if site conditions so indicate, several tests in separate holes spaced uniformly over the proposed site) within the proposed absorption field site.

5. Procedure. All percolation tests required shall be performed in accordance with the following:

   a. Dig or bore the holes with horizontal dimensions of from 4 to 12 inches and vertical sides to the depth of the bottom of the proposed absorption device. Holes can be bored with 4-inch diameter post-hole type auger.

   b. Roughen or scratch the bottom and sides of the holes to provide a natural surface. Remove all loose materials from the hole. Place about two inches of coarse sand or fine gravel in the hole to prevent bottom scouring.

   c. Fill the hole with clear water to a minimum depth of 12 inches over the gravel. By refilling, if necessary, or by supplying a surplus reservoir of water (automatic siphon), keep water in hole for at least four hours, and preferably overnight. In sandy soils containing no clay, the above saturation procedure is not necessary and the test can be made after the water from one filling has seeped away.

   d. Percolation rate measurements should be made on the day following the saturation process, except in sandy soils.

   e. If water remains in the test hole after overnight saturation, adjust the depth to six inches over the gravel. From a fixed reference point, measure the drop in water level over a 30-minute period.

f. If no water remains in the hole after overnight saturation, add clear water to a depth of about six inches over the gravel. From a fixed reference point, measure the height of the water surface at approximately 30-minute intervals over a four-hour period, refilling the hole to a depth of six inches as necessary. The drop which occurs during the final 30-minute period is used to calculate the percolation rate.

g. In sandy soils, or other soils in which the first six inches of water seeps away in less than 30 minutes, after the overnight saturation period, the time interval between measurements can be taken as 10 minutes and the test run over a period of one hour. The drop which occurs in the final 10-minute period is used to calculate the percolation rate. See Table III.

C. Individual Water Supply and Sewage Disposal not Provided by Subdivider.

1. In the event that lots are sold by the subdivider without first constructing the water supply and/or the sewage disposal systems in the manner as approved by the State Board of Health on the filing plat, the subdivider shall then include in the deed or documents of the transaction of sale a clause to the effect that the buyer shall install any water or sewage facility in accordance with the lot layout as previously approved by the State Board of Health.

Section V. Criteria for Individual Water Supply Systems and Sewage Disposal Systems.

A. General

1. Size of lots. The minimum size of lots may be regulated by local planning boards or other officials, but the size approved by the State Board of Health will be governed largely by the area necessary for the safe accommodation of individual wells and sewage disposal systems. The lots must be sufficiently large to allow a safe separation between wells and sewage disposal systems and to accommodate sewage disposal systems within the bounds of the property allowing a reasonable distance to the property lines. If the sewage disposal systems are located in front of the house, they must be kept a safe distance from the house and a proper distance from the property lines. Table I gives minimum safe distances in feet. A sufficient and definite set-back for the houses shall be determined based on the design of the sewage disposal system.

2. When an individual well and sewer system are to be provided to serve the property, the minimum size will be determined by the soil porosity, ground water depth, amount of water usage anticipated and in general will be not less than 20,000 square feet, but may be more if so indicated by the data submitted. When either an individual water system or an individual sewer system are to be provided to serve the property and the other service will be provided by the community, the lot size will be determined by the physical characteristics listed above, and in general will be not less than 10,000 square feet, but may be more if so indicated by the applicable data and the rules and regulations pertaining thereto.

3. Included with each plan for a subdivision shall be typical layout or layouts of the individual lots showing the location and type of arrangements for water supply and sewage disposal which the developer or the purchaser of the lot must follow when he erects a dwelling or shelter on the lot. If the size of lots, topography and soil conditions are uniform throughout the subdivision, a single typical lot layout will be sufficient. However, if topography or ground water conditions may vary over the subdivision development additional typical lot layouts shall be required.

B. A typical lot layout detail will include the following information and shall be drawn to scale.

1. All critical dimensions and distances, (for one lot, length and width, or for irregular shaped lots, dimensions of each side).

2. Location of house with distances from street and property lines.

3. Location of well with distances to sewers, septic tanks and subsurface disposal field and the property lines.

4. Location of sewage disposal system including septic tanks and subsurface drainage fields with distances to well and property lines.

C. Water Supply for individual lots shall include:

1. Depth of wells.

2. Diameter of wells.

3. Depth of water in the wells.

D. Sewage disposal systems for individual lots will include the following information:

1. Size of sewers.

2. Slope of sewers.

3. Size of septic tank.

4. Size of subsurface field.

5. Slope of drain lines in subsurface drainfield.

E. Future expansion possibilities shall be indicated by dotted lines in instances where such expansion is probable.

Section VI. Individual Water Supply Systems.

A. General

1. Individual water supply systems shall be so constructed as to provide an adequate quantity of water which is free and protected from

bacteriological contamination and is of a satisfactory chemical quality so as to cause no unfavorable physiological effects on those consuming the water.

2. The water system shall provide a sustained yield of at least five gallons per minute.

B. Location

1. Wells shall not be constructed in pits nor within the foundation walls of dwellings.

2. The well site shall be adequately drained and free from flooding.

3. The well shall be located at least the minimum distances from pollution as shown in Table I.

4. Wells shall be located at least ten feet from property lines.

C. Construction

1. All wells shall be constructed with a watertight casing from a point several feet below the water level in the well at the time of maximum drawdown or from an impervious strata if one exists above the water-bearing formation to a safe elevation of at least twelve inches above the concrete slab at the ground surface or at least twelve inches above the finished pump room floor.

2. In no instance shall water be taken from a formation which is less than 20 feet below the natural ground surface.

3. The casing shall be of sound durable watertight material capable of sustaining the loads imposed.

4. The annular opening between the drill hole and the casing shall be suitably sealed to prevent surface or subsurface pollution from entering the well. This annular opening shall be sealed with puddled clay, cement grout, or other impervious material.

5. The ground surface around the well shall be graded to drain surface water away from the well. A concrete slab at least four feet square shall be constructed around the well casing.

6. Breather pipes or vents shall be screened to prevent insects and dust from gaining access to the water supply.

7. All openings in the casing or cap for the entrance of pipes, pump, manhole or wires shall be made watertight by appropriate seals.

8. Upon completion of the construction of a well and water system, the complete system and well shall be thoroughly disinfected in the manner prescribed in Appendix A.

Section VII. Individual Sewage Disposal Systems

A. General. The liquefaction of the solids is accomplished in the septic tank by bacteria normally present in sewage. The tank shall be so constructed as to allow a settling and retention of the solids for approximately 24 hours. The conditions best suited for this action are the absence of air and a quiet environment.

B. Location of Septic Tank. The septic tank should be located as near the house as is practicable but shall be kept the minimum distances indicated in Table II from property lines, springs, wells or other water supplies. It must be lower than the source of all sewage to be treated. It is desirable to place the tank below the surface of the ground. It should have no more than 12 to 16 inches of soil over it. In order to prevent settling or cracking of the tank, it should be constructed in solid, well-packed soil that will afford a good foundation for the concrete.

C. Size of Septic Tank. The tank shall be large enough to retain the sewage for at least 24 hours. The size shall be determined by the largest number of persons that may live in the house rather than the number actually living there at the time the tank is built. If there is any question as to which of two sizes should be used, it is wise to choose the larger. In no case shall the capacity of the tank below the flow line be less than 750 gallons. See Table V.

D. Location of the Disposal Area. The location of the disposal area should be selected with care. The lines shall be located 100 feet or more from all wells, springs or streams and on ground sloping away from the water supply. The lines shall not approach a flowing stream closer than 50 feet. The disposal area may be a lawn, field, orchard, or pasture, but it is necessary that it be sufficiently extensive to contain the necessary length of the tile properly spaced, and so well drained that any water introduced into it will readily seep away. If the area is subject to flooding, trouble will be experienced in having water "backing up" into the system.

E. The Soil of the Disposal Area.

1. The character of the soil of the disposal area must carefully be considered. Soil best adapted to the purpose is a coarse, sandy or gravelly soil sufficiently porous to be readily drained. Very fine sand may soon choke and clog up the drain, thus shortening the period of usefulness of the system. Clay and other impervious soils make seepage so slow as to render the system almost useless. In limestone regions the fissures which are often present provide channels through which the sewage may pass so rapidly and directly to underground water courses as not only to prevent purification of the sewage, but also to allow contamination of such water. Water-logged soils will not allow proper drainage or purification.

2. No single tile line should be more than 100 feet in length.

3. Where the soil is tight and will not absorb the septic tank effluent in a reasonable length of time, subsurface filters or sand filters are resorted to. This method of disposal is accomplished by widening and deepening of the trench in which the drain tile are laid, and placing a drain surrounded with gravel in the bottom of the trench (Figure I). On top of this is placed at least 18 inches of sand.

The two or more tile lines receiving the discharge from the tank are laid not less than 24 inches apart on top of the sand in a bed of gravel, and the trench is then filled with earth to grade. The under-drain collects the filtered sewage and discharges it to the county drain or other approved outlet.

F. The Tile Distribution Lines

1. The effluent from the tank shall be led through four or six-inch vitrified tile pipe, bell and spigot type, with tightly cemented joints laid with a fall of about one foot to every 100 feet, to the absorption or distribution tile. This tight pipe should not be less than ten feet in length. At the end of this tight pipeline, an observation or distribution box, approximately 12 inches square, may be constructed, so that the condition of the liquid flowing from the septic tank may be observed and any solids in the tank effluent may be detected. This pit or box may be made of wood or concrete. The open joint tile connects near the bottom of this box while the tight line comes in at a level where a sample may easily be collected and observed for any solid material which might be coming out of the tank. The tile drains are composed of four-inch tile either of the bell and spigot type, laid with open joints, or of the common agriculture tile, allowing a space of 1/4 inch between each length. The joints of the tile should be covered with tar paper, old pieces of linoleum, coarse broken pieces of tile or other material to prevent the spaces from filling with earth when covered. These should be laid carefully to grade having a fall of two to four inches per 100 feet.

2. Perforated bituminous fiber or clay subdrainage pipe or the more recently developed self-centering perforated pipe may be used in place of drain tile. If this type of pipe is used, it should be laid so that perforations occur only along the lower half of the pipe.

3. The length of the distribution lines will depend upon the character of the soil in which they are laid and as indicated by the percolation test and figures shown in Table IV. The shape which the system takes will depend somewhat upon the shape of the area to be used. It is preferable, however, to divide the sewage allowing it to pass into two or more lines of shorter length rather than in only one of greater length.

4. The distribution lines should rest upon coarse sand or gravel. If this is available at the proper depth, trenches wide enough to make work easy should be dug deep enough to allow a back fill of at least 12 inches from the top of the tile. A covering of 20 inches may be preferable in some cases, but it should not be greater than this.

5. The length of service of such a subdrain system depends upon the amount of sewage going into it and the character of the filtering material. As in the case of the tank, the final disposal area should be watched for signs of improper operation. If the soil is properly absorptive and the grade of the tile proper, there should be no need of renewing the system for several years.

Section VIII. Form E.S. 91

A. Statement of information Form E.S. 91 shall be completely filled out and shall be filed with the plan for the subdivision.

B. The measurements required in Form E.S. 91 must be accurately determined and must agree with the data shown on the plans.

C. Definite maximum and minimum elevations shall be indicated, not the average elevations (Item II).

D. Approximate distances under one mile shall be in hundreds of feet (Items 13 and 15).

E. If answers to any item need explanation, further information shall be given. (A "yes" answer to Items 17 and 18 shall be explained in second part of the item).

F. The statements "not available" or "none" will not be considered as acceptable answers at any time.

TABLE I

Minimum Safe Distances

Source of Pollution	Minimum Distance (feet)
Septic tank	50
Absorption field	100
Seepage pit	100
Absorption bed	100
Sewer lines with permanent water-tight joints	10
Other sewer lines	50
Other	(1)

(1) Recommendation of Health Authority

TABLE II

Minimum Safe Distances in Feet

From	To			
	Septic Tank	Absorption field	Seepage pit	Absorption bed
Well	50	100	100	100
Property line	10	5	10	10
Foundation wall	5	5	20	5
Water lines	10	10	10	10
Seepage pit	6	6	(1)	--

(1) Three diameters

TABLE III

Soil Absorption Field Design Area

Percolation Rate (Time required for water to fall one inch in minutes)	Required Absorption Area (Square feet of absorption trench bottom per bedroom)			
	Without garbage grinder or automatic washer	With garbage grinder	With automatic washer	With both garbage grinder and automatic washer
2 or less	50	65	75	85
3	60	75	85	100
4	70	85	95	115
5	75	90	105	125
10	100	120	135	165
15	115	140	160	190
30	150	180	205	250
45	180	215	245	300
60	200	240	275	330

Over 60 unsuitable for subsurface absorption system.

TABLE IV

Size and Minimum Spacing
Requirements for Disposal Trenches

Width of Trench-W at bottom (Inches)	Depth of Trench-D (Inches)	Effective Absorption Area in sq. feet per lin. feet	Tile line Spacing-S (Feet)
18	18 to 30	1.5	6
24	18 to 30	2.0	6
30	18 to 36	2.5	7.5
36	24 to 36	3.0	9.0

Sample Calculation:

3 bedroom house (garbage grinder) = 6 people house
Results of Percolation Test #1, 5 min.; #2, 10 min. Average = 5 + 10 = 15
15 ÷ 2 = 7½ minutes
Tank capacity = 900 gallons (minimum size for 3 bedroom house)
Absorption area per bedroom = 105 square feet X 3 = 315 square feet for 3 bedrooms
2 feet wide trench 2 square feet / lineal feet
Length of tile = 315 ÷ 2 = 158 feet

TABLE V

Capacities, Dimensions, and Concrete
Materials for Septic Tank Serving Individual Dwellings

Number of Bedrooms	Liquid Capacity of Tanks (Gals.)	Recommended Inside Dimensions				Materials for Concrete 1 : 2½ : 4 Mixture		
		Width W	Length L	Liquid Depth D	Total Depth	Cement Sacks	Sand Cubic Yards	Gravel Cubic Yards
2 or less	750	3'6"	7'6"	4'0"	5'0"	17	1 1/2	2 1/2
3	900	4'0"	7'6"	4'0"	5'0"	18	1 1/2	2 3/4
4	1,000	4'0"	7'6"	4'6"	5'6"	20	1 3/4	2 3/4
5	1,250	4'3"	8'9"	4'6"	5'6"	23	2	3 1/4
6	1,500	4'6"	10'0"	4'6"	5'6"	25	2 1/4	3 1/2

APPENDIX "A"

Disinfection of Water Pipes, Wells and Reservoirs

It is necessary to disinfect all new water pipelines, wells and reservoirs before these structures are placed in regular service. This procedure should be followed by all. When lines are opened for repair or reservoirs are cleaned, disinfection should be used to eliminate the contamination which invariably follows.

Utmost care should be taken in the laying and handling of pipe to prevent dirt and foreign matter from entering the pipeline. All new pipe, before it is placed in position, should be thoroughly cleaned to remove dirt, gravel and other foreign material, and also to make sure that there are no small animals lodged in it. Trench water should be prevented from entering the pipe by placing a plug or seal over the end of the pipe. When work is terminated for the day, the open ends of the pipe should be closed with a water-tight plug to prevent animals from entering the pipeline. When an existing pipeline is opened for any reason, the same care must be taken to prevent trench water, foreign material and small animals from entering the pipe.

The disinfection of wells may be accomplished after the well has been completely constructed. It should be thoroughly cleaned of all foreign substances, including tools, timbers, ropes, debris of any kind, cement, oil, grease, joint dope and scum. The casing should be thoroughly swabbed, using alkali if necessary, to remove oil, grease or pipe dope. The well should then be disinfected with a chlorine solution. A chlorine solution of at least 50 parts per million should be added to the annular opening between the casing and the drop pipe. The pump equipment should then be started and operated until the odor of chlorine is detected at the discharge end of the pump. The equipment should then be shut off and the chlorine solution allowed to remain in contact with the pump and casing for a period of at least two hours. After the desired retention time, the equipment should again be put into operation and the well flushed until the odor of chlorine is no longer detected.

Pipelines can be disinfected by using liquid chlorine gas and water mixture, calcium or sodium hypochlorite and water mixtures, or chlorinated lime and water mixtures. The chlorine-bearing compounds should be placed in solution and added at the beginning of a pipeline extension or at the head of any valved section of it. It has been found, by using a corporation stop and a small injector pump, that the chlorine-bearing material can be placed into the pipeline very easily, if there is no pressure. An alternate method of treating water mains is to add the required amount of chemical at the joints of the pipe as they are being laid, then, upon completion of a section of the system, this portion can be filled with water and allowed to stand the required time.

Chlorine solutions of at least 40 to 50 parts per million should be used in the disinfection of water systems. In some instances, more chlorine may be required as it is recommended that a chlorine residual of at least 10 parts per million be detected at the extremities of the system after the required holding time.

A holding time of 24 hours is recommended for all water mains, and for new extensions. The retention time for disinfection of repairs in an existing system is dependent upon the necessity of getting the system back into service. In such instances, the longest retention time possible, up to 24 hours, should be used.

Valves should be manipulated so that the chlorine solution in the line being treated will not flow back into the line supplying water. All new valves and hydrants in the system should be operated so that they will come in contact with the chlorine solution and be thoroughly disinfected.

After the required retention time, all the chlorine water shall be thoroughly flushed from the newly laid pipeline at its extremities, until the replacement water throughout its length shall, upon test, be proved comparable to the quality of the water served to the public from the existing water supply system.

There are a number of products on the market at the present time containing hypochlorite which can be used in the disinfection procedure. The following table, based on the use of hypochlorite with 70 percent available chlorine, gives the required amount of material to use in the disinfection of various size pipelines:

Pipe Size (Inside Diameter, Inches)	Ounces or Pounds Hypochlorite Per 100 Feet of Pipe	Convenient Intervals for Hypochlorite Additions		
		(1 ounce)	(6 ounces)	(2 pounds)
4	0.67 ounce	144 feet	----	----
6	1.50 ounces	64 feet	----	----
8	2.67 ounces	36 feet	----	----
10	4.19 ounces	24 feet	----	----
12	6.03 ounces	16 feet	96 feet	----
16	10.72 ounces	----	60 feet	----
20	1.05 pounds	----	36 feet	----
24	1.51 pounds	----	24 feet	----
30	2.36 pounds	----	16 feet	84 feet
36	3.40 pounds	----	----	60 feet
42	4.62 pounds	----	----	48 feet
48	6.03 pounds	----	----	36 feet
60	9.43 pounds	----	----	24 feet

NOTE: The above dosage is based on a dry pipe in a dry ditch.

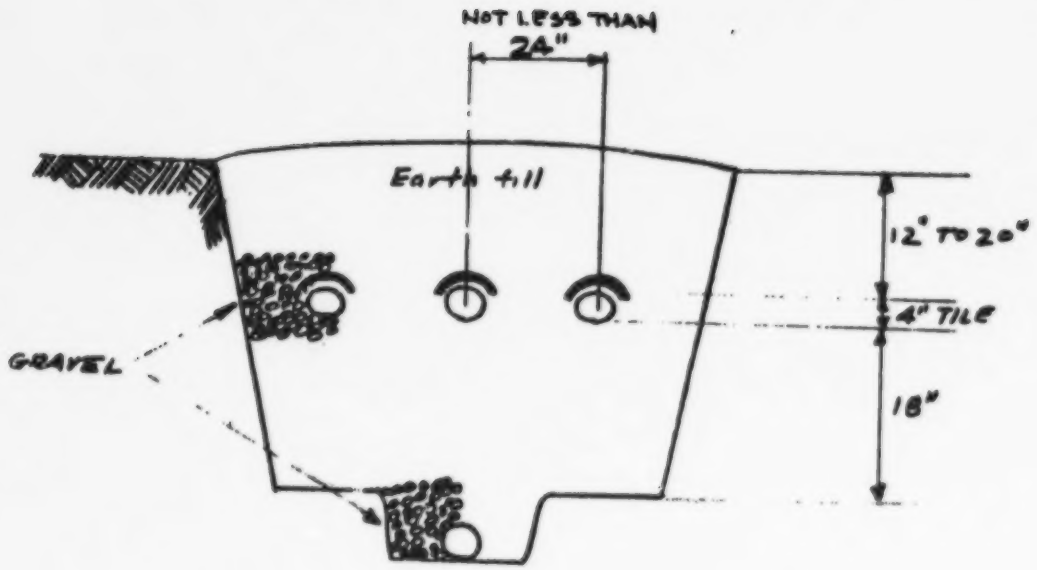
Other chlorine-bearing products such as Chloride of lime, Clorox, Purex, and other home bleaching materials may be used, but the amount of chlorine available is less and therefore, more material is needed to provide adequate disinfection. (1 ounce HTH = 2.8 ounces chloride of lime = 14 ounces clorox solution).

Water tanks, reservoirs, and basins should also be thoroughly disinfected after cleaning or upon being originally installed. For new tanks, the residue of oils, greases and other materials that may hold contaminating organisms should be thoroughly disinfected. To disinfect tanks and reservoirs, a chlorine solution containing 500 parts per million of available chlorine should be used. This solution may be prepared in accordance with the following formula:

4.5 ounces of hypochlorite (70% available chlorine) to each 50 gallons water used.

A brush or spray may be used to make the application of the chlorine solution to the sides and bottom of the tank. The best results are obtained by allowing a period of two to four hours to elapse after the application before turning in the water to flush the tank. In all cases, the first water entering the tank should be allowed to run to waste to eliminate loose material not entirely removed by previous cleaning.

It is recommended that, upon completion of the chlorination of the system, that water samples be collected and sent to the State Department of Health laboratory for examination. If contamination is shown to be present in the water supply, the chlorination procedure shall be repeated until the desired results are obtained.



DETAILS OF FILTER BED

FIGURE NO. 1

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REGULATION No. 52.40-10

MONTANA STATE BOARD OF HEALTH

Pertaining to submission of reports, plans, and specifications and to the issuance of permits for the discharge of sewage, industrial wastes or other wastes into the waters of the state of Montana.

I. AUTHORITY. The authority for the following regulations for the issuance of permits and submission of plans and specifications for the discharge of sewage, industrial or other wastes from commercial or industrial operations into the waters of the state of Montana is provided for in the Water Pollution Act of the State of Montana. Applicable sections of the law are shown below:

Section 69-4806. It is unlawful to:

(1) cause pollution as defined in section 69-4802* of this act to any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;

(2) carry on any of the following activities without a current permit from the department:

(a) operate a disposal system which discharges to the state waters;

(b) construct or modify a disposal system which discharges to the state waters;

(c) increase the volume or strength of sewage, industrial wastes, or other wastes in excess of the permissive discharges specified under any existing permit;

(d) construct or use any new outlet for the discharge of sewage, industrial wastes or other wastes to the state waters.

Section 69-4807. The department may require plans and specifications to determine if a permit should be issued. If a violation of a permit causes damage to a water use, the department may immediately order revocation of the permit without a hearing and so notify the violating person in writing, by registered mail, return requested, the revocation to be effective immediately upon receipt of such notice by such person.

Section 69-4808. (2) The state board may:

(d) issue, modify or revoke orders for the abatement of pollution;

(e) issue, revoke, modify, or deny permits to persons for the collection and discharge of sewage and wastes under conditions prescribed by the state board and the council.

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* 69-4802 (5): "Pollution" means the alteration of any of the properties of state waters which is detrimental to their most beneficial use.

II. REPORTS, PLANS AND SPECIFICATIONS.

A. Reports, plans and specifications shall be submitted for the following:

1. New sewerage systems, disposal systems and treatment works;

2. Extensions, modifications of or additions to new or existing sewerage systems, disposal systems or treatment works;

3. Extension and modifications of or additions to factories, manufacturing establishments or business enterprises, the operation of which would cause increase in waste discharges;

4. New outlets for the discharge of sewage, industrial wastes or other wastes into any sewerage system or otherwise into the water of the state.

B. Time of Submittal -- The report, plans, and specifications should be submitted at least 30 days before a permit is desired.

C. Contents of report, plans and specifications:

1. For a sanitary sewerage and sewage treatment system, the Recommended Standards for Sewage Works as adopted by the Great Lakes - Upper Mississippi River Board of State Sanitary Engineers should be followed except where specific criteria have been developed by the State Department of Health.

2. A general plan of the site indicating the following:

   a. topography and exact location of the site;
   b. the location of the main plant or operation;
   c. the location and elevation of piping external to the plant or operation;
   d. the location of any drain ditches;
   e. the location and elevation of all waste treatment facilities external to the main plant or operation;
   f. high and low stream elevations.

3. A process and waste flow diagram showing the following for industries:

   a. water and material balances;
   b. chemical additions;
   c. waste volumes and concentrations before and after treatment including, but not limited to:

      (1) oil and other floating material,
      (2) settleable and suspended solids,
      (3) acids, alkalies, and dissolved salts,
      (4) organic material,
      (5) toxic materials,
      (6) compounds producing taste and odor in water or in the flesh of edible fish,
      (7) colored materials and dyes.

4. Construction plans and specifications for all waste treatment facilities including appurtenant items such as flow measuring devices and river outlet structure. Where there are separate manufacturers' drawings for waste treatment facilities, these should be provided. If manufacturers' drawings are not available at the time final plans and specifications are submitted, then the necessary design information should be submitted so that rise rates, weir overflow rates, retention times, air capacities, and pressure losses can be determined.

5. Percolation test results of soils in area of waste treatment ponds.

6. Potential for and measures to be taken for emergency and accidental spills.

7. Available toxicity assays of the process, water and waste treatment chemicals to be used.

8. An estimate of the rate of low flow of the receiving stream.

9. Proposals for analysis and monitoring of waste and river characteristics.

10. Anticipated difficulties in the construction or operation of waste treatment facilities, if any.

III. PERMITS.

A. When Issued

1. New discharges -- A permit signed by the Secretary of the State Board of Health or his designated agent shall be issued to the person applying for the discharge of sewage, industrial wastes or other wastes to the state waters where the report, plans, and specifications review indicates that contamination and/or pollution will not occur with the discharge. The State Water Pollution Control Council has previously established stream criteria and classifications which will change the definition of pollution from stream to stream.

2. Existing discharges --

a. A permit signed by the Secretary of the State Board of Health shall be issued in the manner outlined in III. A. 1. to the person discharging sewage, industrial wastes, or other wastes to the state waters at the time of the adoption of this regulation if it is determined by the State Department of Health that pollution or contamination does not exist from this discharge.

b. In cases where contamination or pollution exists or the minimum treatment requirements as established by the State Water Pollution Control Council are not met, a permit may be issued by the Secretary of the State Board of Health and the correction needed will be outlined on the permit. The time limit for the permit shall coincide with the dates outlined in the Council's compliance schedule.

B. Conditions of Permit

1. On the permit, conditions under which the permit is issued will be outlined. Included in, but not limited to, these conditions shall be:

   a. That adequate maintenance and operational skill and time will be provided for the process and waste treatment equipment to meet the original design outlined in the report, plans, and specifications previously submitted to the State Department of Health;

   b. That the permit does not allow the discharge of wastes other than those mentioned in the report, plans, and specifications previously submitted to the State Department of Health or at any other discharge point than that indicated;

   c. That wastes as outlined on the permit will not be discharged until all the treatment facilities are in operation.

C. Acceptance of Conditions of Permit

1. The owner will acknowledge the conditions of the permit by returning a signed copy of the permit to the State Board of Health. The permit is not considered in effect until receipt of the signed copy by the Board.

D. Revoking of Permit

1. The permit is subject to termination if the State Board of Health finds:

   a. That it was procured by misrepresentation of any material fact or by lack of full disclosure in the application;

   b. That there has been a violation of the conditions therein;

   c. That due to unforeseen circumstances, additional facilities are needed to prevent contamination or pollution.

E. Time Limit for Permit

1. Permits will be issued for a period not to exceed five years. Before the end of the permit period, the original permit will be reviewed to determine if all conditions are being met, that stream conditions have not changed, and if a new permit can be issued.

MONTANA STATE DEPARTMENT OF HEALTH

APPLICATION FOR TREATED INDUSTRIAL WASTE DISCHARGE PERMIT

Application is hereby made for a permit to discharge wastes into the state waters in accordance with Sections 69-4806 through 69-4808 of the 1947 Revised Codes of Montana and State Board of Health Regulation No. 52.40-10.

Name of Company _____

Address _____ City _____

Name of Receiving Waterway _____

State Department of Health records indicate that plans and specifications for the above described plant were received and approved on the following dates:

Description	Received	Approved
_____	_____	_____
_____	_____	_____
_____	_____	_____

If changes have been made or if State Department of Health records indicated are incomplete, submit the necessary material to adequately indicate the existing or proposed waste treatment facilities.

Additional information is needed on the following items: (please attach material requested)

_____

_____

If the above requested information cannot be supplied, please give reasons:

_____

_____

Plant Operation:

Continuous _____ Intermittent _____

If Intermittent:

Days operated per year _____

Hours operated per day _____